Nicholas Rescher

# Reality and Its Appearance

Continuum Studies in American Philosophy

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# Preface

Reality and appearance are the ying and yang of existence. Each is needed to complement the other within a meaningful whole. Reality without appearance is cognitively sterile; appearance without reality is mere illusion.

To be sure, the gap between reality and appearance has intrigued philosophers since the very start of their subject. And in recent years it has been part of the stagesetting of my concerns with the limits and limitations of human cognition, extending over many publications. The present book is an attempt to put various pieces of the mosaic together into a coherent picture of the relation between reality and its appearance.

I am indebted and grateful to Estelle Burris for her ever-competent help in preparing my materials in a form suitable for printing.

Nicholas Rescher
Pittsburgh PA
February, 2008

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# Introduction

"Do not judge by appearances" says the old adage. But while this is sound advice, we cannot follow it blindly. For appearances are frequently all that we have to judge by—and they are often a good deal better guides than nothing at all. And yet there are many problems here. The distinction between reality and its appearance is indispensable for any account of knowledge and its many congeners—ignorance, error, and misunderstanding included.

Examination of the relation between reality and appearance did not have to await the 1893 publication of F. H. Bradley's classic *Appearance and Reality*; it has been on the agenda of philosophy from its very inception in classical antiquity. And over the years there has developed a vast literature on the topic—a literature so vast, in fact, that it seems futile to entertain the idea of making any instructive additions to it. Nevertheless, I have been emboldened to make the attempt by a wish to unravel certain confusions or conflictions of ideas that have crept upon the scene over the years.

At the heart of the book here lies a series of questions:

- How is the conception of reality to be conceived of?
- What—if anything—can be said substantially about what reality is like "in itself"?
- How are we to conceive of the relation between reality and what we accept as being our knowledge of it?

One key task of this book is to substantiate and elucidate the idea that two distinguishable and distinct conceptions of

reality must be reckoned with, namely:

— an epistemological conception according to which reality is the body of fact asserted by true and duly informative propositions.
— an ontological conception according to which reality is the manifold of existence whose causal operations issue in "the appearances."

These two are decidedly distinct issues relating ultimately to two very distinct questions: (1) What do we accept as true?, and (2) What there is about the world's arrangements that lead one's view of the truth to be formed as is? It will be argued here that, notwithstanding its prominence in the tradition, the second approach is problematic and inappropriate. For in the final analysis there is no cogent reason for seeing the causes of things as more real than their effects.

Moreover, even that first issue has to be reconstrued and reformulated with care. For many perfectly true statements are simply incapable of and unqualified for characterizing reality—statements which, albeit true, are merely approximate, imprecise and vague. For instance, that there were roughly 50 people present may be true, but hardly characterizes the reality of the situation. Accordingly, even that merely epistemic conception of reality needs to be refined and circumscribed.

Elucidating the nature of reality is not simply a matter of inquiry into the facts, but involves a great deal of clarifying ideas and elucidating concepts. It calls for untangling and elucidating concepts—in sum, for philosophical work.

And so, the aim of the book is not to address the substantive and factual question of what reality is actually like; rather, it addresses the conceptual and analytical question: How does the concept of reality function and how are we to think appropriately with regard to the issue of reality's relations to the appearances? A second main thesis of the book is that the distinction between reality and its appearance is not a

substantive distinction between two kinds or types of being but rather relate to different ways of considering and understanding one selfsame mode of being. And a third prime point of the book is to argue that while realism is a sensible and tenable position nevertheless there is something to be said for idealism as well. Specifically when it comes to the validation of realism—the exposition of its justification rationale—it will eventuate that certain idealistic perspectives and lines of thought are also going to come into operation.

In one fundamental respect the position of the present book is akin to Bradley's. It too sees our knowledge of reality as imperfect and accepts that appearance is not faithful to reality. But it sees the ground for this imperfection not as lying—with Bradley—in the *incoherence* but rather in the *incompleteness* of our knowledge of the real. And it sees the reason for this circumstance as lying not in an absolute necessity mandated by logic, but rather in the conditional necessity of our epistemic situation. For the resources of inquiry at our disposal as ultimately unable to meet the challenge of providing an account of reality that is comprehensive and complete. In the cognitive as in the moral life perfection is beyond our human grasp and we have no choice but to rest content with the best that we can manage to achieve in practice. This perspective shifts the approach from the absolutism of a Bradleyan neo-Hegelianism to a pragmatism that is prepared to come to terms with the limitations inherent in our human situations in the world's scheme of things. Accordingly, what the present book defends is a substantive realism which itself rests on a justificatory rationale of a decidedly pragmatic orientation.

Chapter 1

# Reality vs. Appearance

## Synopsis

(1) The real contrasts with the merely apparent. (2) Experience is our only gateway to the real, but reality always transcends the limits of the experiential status quo. Metaphysical realism accordingly envisions reality as mind-transcendent. (3) In the long historical tradition of distinguishing reality from appearance there is often a misleading conflation of epistemic and ontological considerations. (4) Properly construed, the idea of reality pivots on the contrast between what actually is so and what is merely—and perhaps mistakenly—thought to be so. But this is certainly not an *ontological* distinction; on its basis there is no distinct realm of "authentically real things" hidden behind a "veil of appearance."

## 1. Reality vs. Appearance

The characterization of something as *real* often serves simply to distinguish what is actual and authentic from that which is merely purported to be so. Reality then contrasts with such alternatives as:

| | |
|---|---|
| fiction: | contrived or imaginary accounts |
| fakery: | imitations, spurious pretenses, illusions, "magic"/slight of hand |

| | |
|---|---|
| delusion: | mirages, "voices" |
| pretence: | deceit, make-believe, seeming, merely apparent |
| ersatz: | synthetic, substitute |
| simulacra: | look-alikes (stuffed owls) |

This sort of thing is not, however, the object of consideration here.

Again, there is also the sense of "real" as typical or paradigmatic—as with "a real hero" or even "a real beginner." In philosophical discussions, however, the salient contrast is that between the way things actually are and the way they merely seem to be. This too is not our present focus.

Here we have to do with reality when something presents itself as it actually and authentically is, be it a real truth or a real fact. In consequence, the fundamental distinction is not between the appearances available in our experience and that which is inaccessibly external to it, but rather between that which is correct within our experience and that which is somehow incorrect or misleading. It would thus be wrongheaded to think of reality as a distinct *sort of being* different from "the phenomenal realm" of what people take to be so. The crux is not the contrast between what is and what is thought to be, but rather between what is thought correctly and what is thought incorrectly and imperfectly.

In this context of consideration, reality just exactly is, and is nothing but, the condition of things that people purport when they avoid making mistakes and achieve the *adaequatio ad rem* that the medievals saw as the hallmark of truth. Properly conceived, reality is by its very nature accessible to inquiry, albeit to an inquiry which in practice will often get matters wrong. Reality, that is to say, is not something inherently extra-experiential: a mysterious something outside our cognitive reach. Instead, it encompasses that sector of experience which involves the true facts of the matter. After all, there is no reason why things cannot be what they appear in various

respects, and in these respects appear as they actually are. Save in the world of the paranoid, things can be as they appear to be.

But of course they need not be so. As the proverb says, appearances can be deceiving. Our clock looses five minutes a day. Nevertheless on two occasions of the day it will be right on time. But if this circumstance somehow blinds us to this clock's flaws, we will be much deceived.

In distinguishing reality from *mere* appearance, what is fundamentally at issue is thus not an *ontological* distinction of different realms of being or thing-kinds, but an *epistemological* distinction between a correct and an incorrect view of things. Properly understood, the operative contrast is thus not that between reality and the phenomenon but between reality (veridical and authentic phenomena included) and what is misleading or incorrect. For reality can make its appearance in different guises—sometimes correctly and sometimes not. Appearance is not something different in kind and nature from reality, it is how reality presents itself. And reality is not by nature something different from appearance: it sometimes—and one would hope often—actuality is what it appears to be.

The fault line between the real and the apparent runs not only across the space of alternative possible *realities*, but also across the spectrum of envisioned *possibilities* as well. Certain real possibilities can be overlooked; certain impossibilities can be misjudged as available. Thus suppose that a family owns a cat which family members indifferently call either Tom or Puss, whereas a guest thinks that there are two similar cats corresponding to these names. Then Tom being in the house and Puss being in the yard figures in the guest's spectrum of envisioned possibilities whereas reality's spectrum of possibility excludes this prospect.

Just as we must distinguish between actual and merely putative reality, so we must distinguish between actual and merely envisioned possibilities. It thus transpires that there are both ontologically authentic and ontologically inauthentic possibilities,

and that the spectrum of real possibilities can differ from that of envisioned possibility.

A certain envisioned prospect can be classified as:

- Actual (real)
- Non-actual (unrealized)
  - — authentic possibility
  - — inauthentic (merely putative) possibility

In matters of uncertainty (of ignorance and unknowing) this difference between authentic and merely putative possibility can play a significant role. If we do not know how many cats there are in the family then all sorts of possibilities will transpire in our imagination that just are not real possibilities.

Ignorance as to the things that exist will expand the space of envisioned possibilities; misinformation will distort it.

It is sometimes suggested that appearance is simply a version of reality in that it represents another way that reality could possibly be. But this is false. Appearance can—and often does—have features that reality not only does not have, but could not possibly have. For appearance can be vague, indefinite, indeterminate, blurry. But reality—and any of its alternative—does not have these options. Unlike appearance it must be exact, precise, definite in its pervasive and endlessly ramified detail. The letter on the optician's eye chart is something definite, even though its appearance is a blurry mess (an option which reality itself does not have). When we see things confusedly and fuzzily "as through a glass, darkly" we know we are dealing with *mere* appearance; authentic reality—reality proper—just could not be like that. Nor need reality *agree* with true belief in some literal sense of the term. For true belief can be disjunctive, while reality cannot manage that. It cannot hesitate between alternatives, but must "make up its mind." It is just as weird as it sounds to say that reality is by nature that which we know not of.

## 2. Real Existence Involves Mind-Transcendence

What is real? What is it to be real? These are two very different questions. The former is a substantive question that is best left to investigative inquiry. To find out what is real in the world we must investigate it. But the latter is a conceptual question that should be addressed by rational analysis. And only this second question falls within the purview of philosophy.

So—what is it to be real, actually to exist? In addressing this question it seems sensible to begin with the straightforward existence of things in space and time in the manner of trees, dogs, and automobiles. And we then thus proceed reiteratively somewhat as follows, specifying that something exists if

1. it exists unproblematically in the just-specified manner of playing an active causal role in this real world of ours in which our life and our experience unfolds, or else
2. if it is something whose actual existence must be invoked in providing a satisfactory explanatory account of the features of something that exists. (And here it does not matter if the explanatory account at issue is efficiently causal, or functionally finalistic, or conceptually explicative.)

Such a meaning-specification is essentially recursive. It proceeds by sequential steps or stages, maintaining first—ordinary material objects are existentially real, and thereupon extending this stepwise to anything whatsoever that is bound up with the existent by way of explanatory linkages.

Approached in this manner, one quintessential way of being real is by figuring in human experience through being something with which we can get into perceptual contact. This is a special concern of item (1) and is certainly a paradigmatic way of establishing a claim to reality. In fact, Immanuel Kant was sufficiently in the grip of the empiricist tradition to think this experiential route to afford the *only* viable pathway to reality. But this view of the matter is too narrow. For we do well to include in

"reality" not only those things that we experience, but also those processes and factors needed to explain them.

To be sure, such a view of existence is anathema to a considerable array of philosophers for whom our commonplace world is not reality but mere appearance whose furnishings do not really exist. For them, what "really exists" is something that entirely transcends this world of everyday experience (Plato's realm of ideas, for example), or that imperceptibly underlies it (such as Democritus's atoms and the void). With such theorists, what is basic to the conception of reality is not existence as we standardly have it, but a somehow concealed manifold of being that is thought somehow to account for those familiar things. In contrast to such doctrines the present approach to the issue of realism takes the line that in understanding real existence, as in so much else, we must begin from where we are.

Viewing matters in this light casts experience in a leading role as our cognitive gateway to reality. Experiential encounter is the basic and primary way in which one can learn about reality and experience in our inevitable starting point here. But—dogmatic empiricism to the contrary notwithstanding—this is only the beginning and not the whole story. For in the process of a theoretical systematization that seeks to explain what we experience the horizons of our reality will inevitably expand. And as they do so we are led to the conviction that there is always some as yet experience-transcending room for them to expand into.

Such a Metaphysical Realism represents the doctrine that the world exists in a way that is substantially independent of the thinking beings it contains that can inquire into it, and that its nature—its having the characteristics it does actually have—is also comparably knowledge-transcending. In saying of something that it is "a real thing," a concrete object existing as part of the world's furniture, we commit ourselves to various (obviously interrelated) points:

1. *Self-subsistence.* Being a "something" (an entity or process) with its own unity of being. Having an enduring identity of its own.

2. *Physicality or world-boundedness.* Existing within the causal order of things. Having a place on the world's physical scene as a participant of some sort.
3. *Publicity or accessibility.* Admitting universality of access. Being something that different investigators proceeding from different points of departure can get hold of.
4. *Autonomy or independence.* Being independent of mind. Being something that observers find rather than create and *learn about* rather than *define* in the course of their cognitive endeavors.
5. *Experience-transcendence.* Having more facets and features than do—or indeed even can—manifest themselves in experience.

These, then, are the core features of the metaphysical conception of reality. The fact is that our conception of a real thing has at its very core the idea of its projecting beyond the cognitive reach of mind. The governing idea is that there is more to reality than "meets the eye"—that reality somehow transcends appearance.

The salient idea of realism is that the existence and nature of the world are matters distinct from anyone's thinking about it: that—minds themselves and their works aside—the real world is what it is without any reference to our cognitive endeavors and that the constituents of nature are themselves *impervious*, as it were, to the state of our knowledge or belief regarding them. As one expositor puts it: "Even if there were no human thought, even if there were no human beings, whatever there is other than human thought (and what depends on that, causally or logically) would still be just what it actually is."[1] Such a realism is predicated upon a commitment to the notion that human inquiry addresses itself to what really and truly is—the condition of things whose existence and character are altogether independent of our cognitive activities. Reality is not subordinate to the operations of the human mind; on the contrary, man's mind and its dealings are but a minuscule part of reality. The nature of things reaches beyond experience because the things that experience leads us to accept as real are invariably seen as

having features that experience does not reveal. (The features that realia have outrun what we know of them.) Appearance is not something by nature different from reality; it can/will encompass that sector of reality which presents itself to us as it indeed is—albeit only in point since reals will, and invariably must, have features that experience does not make manifest.

## 3. The Historical Perspective

The distinction between Reality and Appearance, between what things are and what they seem to be, has been at the forefront of philosophy from the very start. Heraclitus of Ephesus (b. 540 B.C.) taught that people, "the many," fail to understand the reality of things, for "Nature love to hide" and that "The learning of many things teaches not understanding."[2] For the ancient Greek Atomists the sensory observation yields no knowledge to the true make-up of things. In Plato's *Republic*, the Myth of the Cave carries the lesson that the senses disfigure the idea-shaped nature of the real. Skeptics, empiricists, and rationalists alike saw the deliverances of phenomenal experience as important to convey the nature of reality. With Kant the phenomena gives no insight into the realm condition of things in themselves. With science-minded positivists our experience is unable to convey the true scheme of things. With Nietzsche it does no more than provide convenient or comforting illusions. And so it goes. Much of the Western philosophical tradition erects a cognitively insurmountable barrier between Reality and Appearance.

Against this great body of opinion the present discussion will argue that a basic fallacy has been all too often at work—a confusion or conflation of a cognitive dichotomy of true and false judgment with an ontological distinction between the genuine and the fraudulent. For what is lost sight of in much of the tradition is that even though the real is that which reality and authenticity exists, there is no reason why things as they appear cannot actually have the features as they appear to have.

Regrettably, the contrast between appearance and reality is often identified—and thereby confused—with that between reality on the one side and *mistaken* or *misleading* appearance on the other. And this conflation will, effectively by definition, erect a Chinese Wall between reality and appearance. And this, rather paranoid, view of the matter must be put aside from the outset. To reemphasize: the philosophically significant contrast is not that between the real and the apparent as such, but rather that between the real and the *merely* apparent.

## 4. True Thought is Coordinate with Reality

It is, of course, clear that we have no *cognitive* access to reality apart from forming beliefs about it. In saying that reality is such-and such—that a given state of affairs actually obtains—I will accomplish no more than to convey my conviction in the matter. No matter how hard I thump on the table when I maintain that *p* I accomplish no more than would be accurately reported by saying "Rescher holds *p* to be the case." Whether or not *p* actually is the case is virtually always a distinct and distinguishable issue. In affirming something to be a feature of reality one accomplishes no more than to manifest that this is how the matter appears to be.

But one also accomplishes no less. That claim one makes is not a claim about appearance but a claim about reality. After all, the claim "It appears to me that the cat is on the mat" is something quite different from—and far weaker than—the flat-out assertion that the cat is on the mat. For while factual claims may *manifest* how things appear to us, but they are claims about reality and not just claims about appearance.

To be sure, the coordination of reality with correct thought still leaves open the question: which is the dependent and which is the independent viable in this thought/reality relationship. Does reality depend on what is thought or does thought depend on reality? Are we to be realists and hold that reality is as it is

independently of what people think? Or are we to be idealists and hold that reality is as it is because thought presents it so?

The proper response here is that this is not a matter of either/or, but rather one of *both*—albeit with each duly qualified. Thought is *ontologically* dependent on reality: it is as it is because that's how reality works things out. But, conversely, an *epistemological* dependency runs the other way as well. For the only reality we know of is that which thought puts at our disposal. Thought is ontologically dependent on what is real, but any view of this reality accessible to us is epistemically dependent on thought. So what is at issue here is a matter of coordination rather than vicious circularity.

What can and should be said comes to two main theses:

- What is *truly* thought to be so depends *productively and existentially* on reality's being what it is. True thought is *ontologically* dependent upon reality.
- Our view of reality depends *conceptually* on what is truly thought to be so (because that is how the concept of truth functions). Whatever glimpse of reality we are able to achieve is *conceptually* dependent upon and mediated through true thought (authentic appearance, if your will).

And a deep-rooted coordination is at work here. For the idea of being *truly* thought to be so establishes an indissoluble conceptual linkage between being-thought-to-be and actually being.

We must hark back to the fundamental considerations that:

- *truth* involves an adequation to fact

and

- *fact* characterizes reality and represents things as they actually are.

When we accept a belief as true we have no alternative but to hold that that is how reality actually stands. Thought and belief

are inseparable from reality just exactly because true belief characterizes reality in that whenever our thought about things ("the appearances") actually is correct, then that is how the reality of it actually stands. The relevantly operative contrast is accordingly not that between what is and what is thought to be, but rather between what is correctly thought to be and what is not.

Some philosophers have proposed conceiving of reality as standing in contrast to what people think and thereby set reality apart from whatever people can conceive and know. But this makes no sense at all. To conceive of reality in a way that precludes as a matter of principle the prospect that people should come to know it is decidedly unreasonable. Reality is not to be construed as something inherently disjoint from the realm of the knowable.

## 5. An Ontological Fallacy

Why are the appearances as is? Simply because that's how reality has matters work out. We explain the appearances in terms of reality. If reality were (sufficiently) different, then appearances would not be as they are.

But why is reality as it is? As long as we are dealing with this or that item within its scope, we have the opportunity of explaining it with reference to the rest. But why reality overall is as it is—that is in the lap of the gods!

"Appearance" as philosophers use the term encompasses not just how things manifest themselves in sensory observation but the much broader range of how we take matter to stand—how we accept them to be not just in sense-observation but in conceptual thought as well. On this basis it would be gravely fallacious to take the step—as is often done—to map the real/unreal distinction and the real/apparent distinction. For this mixes the sheep and the goats in heaping vertical appearance together with mere (i.e., non-vertical) appearance, thereby

subscribing to the paranoid delusion that things are never what they seem to be.

Reality is not a distinct realm of being standing apart and separate from the manifold of what we know in the realm of appearance. Those "appearances" will—insofar as correct—be appearances of *reality* that represent features thereof. And, accordingly, the contrast between Reality and Appearance is not one carried out in the ontological order of different sorts of things. The realm of appearance is homogeneous with that of reality insofar as those appearances are correct.

The fact of it is that things sometimes—perhaps even frequently—are substantially as they appear to be. Reality and its appearance just are not two separate realms: there is nothing to prevent matters actually being as they are perceived and/or thought to be.

Appearance can in principle be something self-contained and self-sufficient: when appearing there is there need not be *something* that appears. When it appears to one that that is a pink elephant in your corner there need not be a *something* in that corner which appears as an elephant to me. Appearances may not only be deceiving, they may also be illusionary. In the sphere of appearance things can go seriously awry. And yet while matters can go wrong here, they need not do so. Things can indeed be as they appear. Total paranoia is clearly unwarranted. There is no reason that is, why appearance and reality cannot agree in this or that detail.

Could Reality possibly be just exactly as it appears? It certainly could in this or that detail. When Appearance put the cat on the mat, there is not reason why. Reality cannot also do so. But Reality could not be just as it appears overall and in total. For Appearance has imprecisions, vagueness, blank specs of ignorance. Reality could not possibly be like that. There is always more to things than "meets the eye" of the appearances.

The paramount contrast for the appearance/reality distinction is that between how things are *correctly* thought to be and how they are *erroneously* thought. The salient distinction is accordingly

that not that between mere belief and actual fact, but that between belief that is true (correct) and that which is not—a distinction of status that involves no separation of kinds. When we accept a belief as true we have no alternative but to hold that that is how reality actually stands. And realism thus emerges when we put these ideas together to arrive at the principle that: *True claims about things can and in suitably favorable circumstances will characterize reality as it really is in some manner or respect.* This principle represents an indissoluble link between epistemology and ontology inherent in that medieval idea of truth as adequation to fact.

The crux of the matter is that things sometimes—perhaps even frequently—are exactly as they appear to be. For there is clearly nothing to prevent that things actually are as they are perceived and/or thought to be. In point of actual separation, the crucial contrast is that between how things are *correctly* thought to be and how they are *erroneously* thought to be rather than that between what *is* and what *is thought to be.* There is no insuperable gap between the real and the knowable, no Kantian *Ding an sich*, everlastingly hidden away behind an impenetrable veil between appearance and reality.

A great deal of mischief has been done in philosophy by the idea of a "veil of appearance" based on the distinction of the real from the unreal. For this cannot be identified with the epistemically more natural distinction between

appearance = how things are thought to be
reality = how things actually are.

It is critically important in the interests of clarity and agency not to conflate these two distinctions.

Kant maintained—very problematically indeed—that appearance and reality are different forms of being: the former, appearance, comprised of "mere phenomena" whose nature is irremediably mental, and the latter, reality comprises of "things as they are in themselves" and thereby of a nature completely

unknowable to us. He was convinced (for complex reasons) that something should not actually be as true thought about it represents it as being (which is, after all, what truth thought is all about). But this view of the matter is deeply problematic. Reality and appearance are not two substantively different realms, they involve two different thought-perspectives upon one selfsame realm—the realm of that which exists and thereby lays claim to authentic reality.

What happens all too commonly in this connection is that philosophers transmute such a *conceptual distinction* into a *substantial separation.* But it is a grave error to take the view that what is conceptually *distinct* is ipso facto also substantially *disjoint.* This idea is every bit as flawed as would be the idea that distinguishing between musicians and carpenters conceptually means that an item of the one type could not also belong to the other—that a carpenter could not possibly be a musician as well. In specific, it is emphatically not the case that knowledge of reality is in principle infeasible because reality is somehow a *Ding an sich* hidden away behind the "veil of appearance." The fact of it is that much of reality stands in front of that "veil" by encompassing that part of appearance which happens to be correct.

And so, the salient lesson of acknowledging a potential discrepancy between Reality and Appearance is emphatically not that skepticism is true and that secure knowledge is unavailable. It is, rather, that a cogent skepticism plausible only at the level of grandiosity in holding a secure knowledge *of the whole* to be unachievable—knowledge that is complete and correct in every detail. The facts that speak for skepticism are simply no impediment to achieving secure knowledge in limited and local matters.

## 6. The Impetus of Mind

To be sure, the linkage of reality to what true thought maintains seemingly still leaves open the question: Insofar as thought

agrees with reality, which is the dependent and which is the independent variable in this thought/reality coordination. Does reality depend on what is thought or does thought depend on reality? Are we to be realists and hold that reality is thought independent; it is as is independently of what people think. Or are we to be idealists and hold that reality is as is because thought correctly presents it so.

The long and short of it is that, as regards dependency, the relation of thought of reality is a two-way street. Thought depends *ontologically* upon reality, because thought proceeds as is because that's how reality works it out. And reality depends *epistemologically* on thought because the only pathway to reality that is open to cognizing beings is via their thought-mediated experience of it. The failure to give due heed to the distinction between an *ontological* and a *conceptual* dependency is yet another instance of a misunderstanding that has brought philosophical mischief in its wake.

And yet, the fact of it is that things sometimes—perhaps even frequently—are substantially as they appear to be. Reality and its appearance are not two separate realms: there is nothing to prevent matters actually being as they are perceived and/or thought to be. The paramount contrast is that between how things are *correctly* thought to be and how they are *erroneously* thought. And the salient distinction is accordingly that not that between mere belief and actual fact, but that between belief that is true (correct) and that which is not—a distinction of status that involves no separation of kinds. When we accept a belief as true we have no alternative but to hold that that is how reality actually stands.

Granted, reality need not be exactly as true thought has it. For true thought can be vague, inexact, even disjunctive. But reality must always like at the basis as the truth-maker, the state of things that provides for the truth of true thinking. And there is more to it than even this. For it is also a matter of principle that: True claims about things can in principle characterize reality as it really is in some respect or aspect. This principle represents an

indissoluble link between epistemology and ontology inherent in that medieval idea of truth as adequation to fact, the issue being one of conceptual relations and not of factual inquiry.[3]

Reality can stand by itself on a footing of its own. But appearance requires a mind—an intellect to which something appears. So if life in the universe were extinguished so that there is no thought, would reality still remain? Yes—of course it would. After all, the thought correlativity of reality does not hinge on what thought *does* do, but on what it *could* do. The linkage of reality to thought is not categorical but conditional, not actualistic but potentialistic. (It is this circumstance that makes it possible to operate an idealistic realism.) Reality stands coordinate with the realm of true thought: things *really* are the way they are—or would be—*truly* thought to be. But the potentialistic nature of true thought indicates a richness that far exceeds our actual thought about it.[4]

If we did not have at our disposal the distinction between reality and its appearance, we would be saddled with a decidedly strange view of the nature of the real, and would have no way to effect a viable accommodation between perception with its numerous anomalous and conception with its insistence on the rational cogency of knowledge.

Chapter 2

# How True Thought "Agrees" with Reality

## Synopsis

(1) Fact outruns language. (2) Reality is linked conceptually—not empirically: to true thought about the world's conditions of things. (3) But there is just too much fact for linguistic accommodation. (4) Moreover, this linkage is rather complex because reality (unlike truth) demands detailed exactness. (5) The systemic integrity of truth means that reality must be conceived of as being a rational system that demands coherence, completeness, and consistency. (6) Exactness too is a crucial requisite. And this circumstance engenders a gap between reality itself and our knowledge of it, a gap which, however, does not preclude the prospect of achieving knowledge of truths about reality.

## 1. Fact Outruns Language

Ours is a language-dependent intelligence. Granted, our perceptions and modes of experiential apprehension may involve ineffable components. But our understanding—our witting apprehension of fact (or putative fact)—is always language-embedded. And this leads to inevitable limitations. For our languages are effetely recursive exfoliations from a finite basis. Their productions never extend beyond the enumerable.

But there is no reason to think that reality is subject to such limits—that its nature is digital instead of analogue. And when this concession is made, then larger consequences come to the fore.

As regards the philosophy of science, one such consequence relates to physicalism. For physicalists hypothetically claim that a complete *physical* description is (or at least inferentially provides for) a complete description of it. And given their view of physics as essentially an axiomatic system this discretizes and enumeralizes the facts about reality. But once one concedes (as it seems one must) that a complete axiomatization of the world's facts is impossible, then a physicalism of this type becomes untenable. Even as (courtesy of Kurt Gödel) we have it that mathematical truth extends beyond the reach of mathematical axiomatization, so it must be conceded that the realm of factual truth about reality extends beyond the reach of scientific axiomatization.

Again, linguistic philosophers also incline to identify facts and truths. They insist to hold not only that a true statement must state a fact, but that a fact has to be a stateable fact: in sum they envision a one-to-one competence between truths and facts. But if—as seems to be the case—it is demonstrable that there are more facts than truths, then this sort of linguocentrism also becomes untenable. In sum, the circumstance that as best we can judge, fact outruns language has significant philosophical implications.

There is good reason to think that language-based thought is insufficient for characterizing reality. When one construes the idea of an "alphabet" sufficiently broadly to include not only letters but symbols of various sorts, it still transpires that everything stateable in a language can be spelled out in print through the combinational combination of some sequential register of symbols.[1] And with the conception of a "language" is construed as calling for development in the usual recursive manner, the statements of a given language can inevitably be enumerated in a vast and indeed infinite manner, but nevertheless be ultimately

countable listing.[2] Thus since the world's languages will, even if not finite in number, be nevertheless at most enumerable, it follows that the set of all statements—including every proposition that can possibly be formulated—will be enumerably infinite.

Our resource for describing the world's concrete states of affairs by linguistic means is inherently limited in its reach within the confines of countability. For the limits of textuality impose quantitative limitations upon propositionalized thought—albeit not limits of finitude. Accordingly, we arrive at the following contention:

Thesis 1: *The Enumerability of Statements.* Statements—linguistically formulated propositions—are enumerable and thus (at most) denumerably infinite.

It serves the interests of clarity to distinguish at this stage between truths and facts. Truths are linguistically formulated facts—correct statements—which, as such, must be formulated in language (broadly understood to include symbols systems of various sorts). A "truth" is something that has to be framed in *linguistic/symbolic* terms—the representation of a fact through its statement in some language, so that any correct statement formulates a truth. A "fact," on the other hand, is not a linguistic entity at all, but an actual aspect of the world's state of affairs. A fact is thus a feature of reality.[3] Facts correspond to *potential* truths whose actualization as such waits upon their appropriate linguistic embodiment. Truths are statements and thereby language-bound, but facts outrun linguistic limits. Once stated, a fact yields a truth, but with facts there need in principle be no linguistic route to get from here to there.

Being inherently linguistic in character, truths are indissolubly bound to textuality, subject to our governing assumption that any language-framed declaration can be generated from a sequential string of symbols—i.e., that all spoken language can in principle be reduced to writing. Since they correlate to

statements, it follows that truths cannot be more than countably infinite. We thus have:

Thesis 2: *The Denumerability of Truth.* Being linguistic objects, truths are denumerably infinite.

With facts, however, we come to another matter altogether. It is a key facet of our epistemic stance towards the real world that its furnishings possess a refinement and diversity of detail that there is always more to be said than we have so far managed. In contrast to truths, facts are (presumably) too vast in quantity to be demonstrable. For facts are in principle inexhaustible. The facts regarding any particular actual existent run off into endlessly proliferating detail. In this way even the facts about any actual physical object—are theoretically inexhaustible: there is always something further to be said. Every part and parcel of reality has features beyond the range of our cognitive reach—at any juncture whatsoever. After all, any such thing has dispositions that run off into uncountability.

And so we arrive at:

Thesis 3: *The Inexhaustibility of Fact.* The manifold of fact is transdenumerably infinite.

The idea of a complete listing of *all* the facts—even an infinite list—is manifestly absurd. Consider the following statement: "*The list F of stated facts fails to have this statement on it.*" But now suppose this statement to be on the list. Then it clearly does not state a fact, so that the list is after all not a list of facts (contrary to hypothesis). And so it must be left off the list. But then in consequence that list will not be complete since the statement is true. Facts, that is to say, can never be listed *in toto* because there will always be further facts—facts about the entire list itself—that a supposedly complete list could not manage to register. In the description of concrete particulars we are caught up in an

inexhaustible detail: There are always bound to be more descriptive facts about things than we are able to capture explicitly with our linguistic machinery. We are thus led to:

Thesis 4: *There are quantitatively more facts than truths.* The domain of fact is ampler than that of truths so that language cannot capture the entirety of fact.

Facts being too numerous for enumerability, there are more facts than language can manage to capture. We live in a world that is not digital but analogue and so the manifold of its states of affairs is simply too rich to be fully comprehended by our linguistically digital means.

We accordingly arrive at:

Thesis 5: *The manifold of Truth-as-a-Whole* is too vast to admit of ever being spelled out in detail in its totality.

The domain of fact inevitably transcends the limits of our capacity to *express* it, and *a fortiori* those of our capacity to canvass it in overt detail. When facts and language play their game of Musical Chairs, some facts are bound to be left in the lurch when the music of language stops.

The long and short of it is that the factual domain is so vast in its detail that our reliance on the symbolic mechanisms of language precludes wrapping our thought around the whole of it. The thesis that every fact has a linguistic formulation—$(\forall f)(\exists s)\, sFf$—cannot be maintained, simply and exactly because the range of the fact-variable is larger than that of the statement-variable.[4] There are, in sum, unstateable facts, though it is obviously impossible to give a substantively concrete example of this phenomenon.[5]

## 2. The Perspective of Musical Chairs

It is instructive at this point to look more closely at the abovementioned analogy of Musical Chairs. Of course any individual

play *can/might* be seated. And the same goes for any team or group of them with one exception; namely *the whole lot.* But since the manifold of knowable truth is denumerable and the manifold of fact in toto is not, then (as in our Musical Chairs example) the range of the practicable will not, cannot encompass the whole. (And note then while a team of individuals is not an individual, a complex of facts will nevertheless constitute a fact.)

When reality and language play their game of Musical Chairs, some facts are bound to be left in the lurch when the music of language stops. The discrepancy manifests itself in the difference between *any* and *every.* Any candidate can possibly be accommodated. (We have $(\forall x)\Diamond(\exists y)Syx$.) But it is not possible to accommodate every candidate. (We do *not* have $\Diamond(\forall x)(\exists y)Syx$.) The limits of knowledge are thus in the final analysis quantitative. The crux of the problem is a discrepancy of numbers. They root in the Musical Chairs Perplex—in the fact that the realm of fact is too vast for the restrictive confines of propositionalized language.

With regard to language too we once again confront a Musical Chairs situation. Conceivably, language-at-large might, in the abstract, manage to encompass nondenumerably many instances—particularly so if we indulge the prospect of idealization and resort to Bolzano's "statement in themselves" (*Saetze an sich*), Frege's "thinker-transcending thoughts" (*denkerlose Gedanken*), and the like. But given the granular structure of a universe pervaded by atoms and molecules, only a denumerable number of language-using creatures can ever be squeezed into the fabric of the cosmos. And so the realistically practicable possibilities of *available* languages are at best denumberable.

The reality of it is that the domain of fact is ampler than that of truth. It transcends the limits of our capacity to *express* it, and *a fortiori* those of our capacity to canvass it in overt detail. Truth is to fact what moving pictures are to reality—a merely discretized approximation.

To be sure, the numerical discrepancy at issue with the Musical Chairs Perplex does no more than establish the existence of

*unknown* facts. It does not got so far as to establish the existence of facts that are *unknowable*, facts which cannot, as a matter of principle, possibly be known.

A very important point is at issue here. With Musical Chairs we know that there will be someone unseated, but cannot (given the ordinary contingencies) manage to say *who* this will be. And with facts, which from a cognitive point of view reduplicate the Musical Chairs situation, we also cannot manage to say which facts will be unknown. For here too there is a lot of room for contingency. But there is one very big difference. With Musical Chairs the totality of individuals, while of course not possible to accommodate in toto, nevertheless does not form a single unseatable mega-individual. But the totality of facts—The omnifact, something which obviously cannot be known or even identified in detail—while we know *that* it is unknowable, we do not even know *what* it is. We have *individuated* but not *identified* it. So here, as elsewhere, the details of our ignorance are hidden from our sight.

Just what does this mean in the larger scheme of things?

## 3. The Vastness of Fact

It is a key facet of our epistemic stance towards the real world that its furnishings possess a complexity and diversity of detail so elaborate that there is *always* more to be said than we have so far managed. The complexity of its detail is such that every part and parcel of reality has features beyond the range of our current cognitive reach—at any juncture whatsoever.

Twentieth century philosophers of otherwise the most radically different orientation have agreed on preeminentizing the role of language. "The limits of my language set the limits of my world" ("Die Grenzen meiner Spache bedeuten die Grenzen meiner Welt") says the Wittgenstein of the *Tractatus*. "There is nothing outside text" ("Il n'y a pas de hors de texte") say the devotees of French constructionism. But already centuries earlier

Leibniz had taken the measure of this sort of textualization.[6] He looked at it up close and saw that it could not be wronger.

Reality bursts the confines of textualization.[7] And *that* this occurs must be accepted despite the inherent and unavoidable impossibility of ever indicating just *where* it does so. For, of course, we cannot possibly adduce any concrete example of an unstateable fact.

The cognitive beings with which we are here concerned are language-dependent finite intelligences. The information at their disposal by way of propositional knowledge that something or other is the case will—unlike how-to knowledge—have to be verbally formulated. And language, as emphasized above, stands coordinate with textuality in ways outdistanced by the facts themselves.

What are we to make of the numerical disparity between facts and truths, between what is knowable in itself and what we language-bound intelligences can possibly manage to know? Just what does this portend for our knowledge?

It means that our knowledge of fact is incomplete—and inevitably so!—because we cannot secure the means for its adequate presentation. Reality in all its blooming buzzing complexity is too rich for faithful representation by the recursive and enumerable resources of our language. We do and must recognize the limitations of our cognition, acknowledging that we cannot justifiably equate reality with what can be known by us and expressed in language. And what transpires here for the situation of our sort of mind also obtains for any other sort of finite mind as well.

Does this state of affairs not meant that those unknown facts are unknowable? The answer is neither Yes nor No. As already foreshadowed above, it all depends upon exactly how one is to construe this matter of "knowability." Using $\mathcal{K}xf$ to abbreviate "the individual $x$ knows the fact $f$," there will clearly be two rather different ways in which the existence of an unknowable fact can be claimed, namely

$$(\exists x)\Box(\forall f)\sim\mathcal{K}xf \quad \text{or equivalently} \quad \sim(\forall f)\Diamond(\exists x)\,\mathcal{K}xf$$

and

$$\Box(\exists f)(\forall x)\sim \mathcal{K}xf \quad \text{or equivalently} \quad \sim\Diamond(\forall f)(\exists x)\,\mathcal{K}xf$$

The first of these logically entails the second which is, inevitable in the circumstances, there being more facts than finite humans ever will or can know. But the first, strong contention is clearly false. For as long as the nonexistence of God is not a *necessary* circumstance there can be no fact that is of necessity unknown.

The difference in the quantifier placement in these two formulas is crucial when one contemplates the prospect of unlimited knowability—of the idea that all facts are knowable. (Think here again of children playing Musical Chairs—it is possible for *any* child to secure a seat even though it is not possible of *every* child to do so.) Thus insofar as the issue is problematic, the idea of unknowable facts will have to pivot on the acceptability of the first thesis.

The situation as regards knowing facts is accordingly akin to that of counting integers in specifically the following regards:[8]

1. The manifold of integers is inexhaustible. We can never come to grips with all of them as specific individuals. Nevertheless—
2. Further progress is always possible: we can always go beyond whatever point we have so far managed to reach. In principle we can always go beyond what has been attained. Nevertheless—
3. Moving forward gets ever more cumbersome. In moving onwards we must be ever more prolix and make use of ever more elaborate symbol complexes. Greater demands in time, effort, and resources are inevitable here. Accordingly—
4. In actual practice there will be only so much that we can effectively manage to do. The possibilities that obtain in principle can never be fully realized in practice. However—
5. Such limitations nowise hamper the prospect of establishing various correct generalizations about the manifold of integers in its abstract entirety.

And a parallel situation characterizes the cognitive condition of all finite intelligences whose cognitive operations have to

proceed by a symbolic process that functions by language. Inductive inquiry, like counting, never achieves completeness. There is always more to be done: In both cases alike we can always do better by doing more. But we can never manage to do it all.

## 4. Truth and Reality

It is important to *distinguish* among concrete, objectively existing states of affairs (realities). First a word about usage for the sake of terminological precision. Distinguishing between

- what we do actually think about something (thoughts),
- what we would think about it if our information were really adequate (true thoughts or facts),

is critical for the distinction between reality and appearance, between what there is and what we think about it.

To maintain itself as such, truth need not be fully faithful to reality. That there are roughly twenty lions in the pack may well be a truth. But the reality of it cannot rest there: it must—as such—be definite even though its factuality need not be so. The realities must bear a truth out, but they may not be accurately present by it.

Facts, like truths but unlike realities, can be definite or not: unlike realities they can be vague or imprecise. It is alike a fact that the ratio of the circumference of a circle to its diameter is $\pi$, and that $\pi$ is roughly three and one-seventh—though the reality of it is something more definite than that. Reality, by contrast, must be definite. The number of books on the shelf is one or another of 0, 1, 2, . . . 100. We may be poor at counting and unable to determine just exactly *which* of these alternatives obtain. But *that* one or another of them must do so is inevitable. The facts hinge upon the realities of things—they are what they are in virtue of those realities. But nevertheless the circumstance that truths and facts (unlike realities) are not necessarily definite

means that while they "adequate" to reality (*adaequatio ad rem*) they need not *correspond* to it: they can be vague, indefinite, and imprecise, which realities cannot be.

Imprecision and unclarity do not stand in the way of truth. For it is important to realize that a descriptive characterization need not be detailed and accurate to be true. Yon creature is a bird (one need not say of what sort); the Eiffel Tower is a tall structure (one need not say how tall); Thomas Hobbes died an old man (one need not say just how old). No indeterminate (inexact, vague) descriptive truth about something real conveys an adequate or accurate account of it, but that does not stop such a statement from being true.

Whatever the rest of reality is like, reality cannot avoid being such as to realize one or another of these alternatives. And so various truths may well not actually *characterize* reality, but rather be related to its constitution in more complex and indirect ways. For example we can have:

- negative truths ("No cats talk.")
- vague truths ("He looked thirtyish.")
- inexact truths ("It looks something like this.")
- approximate truth ("the table is roughly 32 inches wide.")
- indefinite truths ("She looked pleased.")
- possibilistic truths ("It might rain.")
- impressionistic truths ("They were lucky.")
- metaphorical truths ("It was a veritable bonanza.")

No doubt such truths will be so in virtue of what the facts are. But they certainly do not *characterize* the real facts. Thus truths can be indefinite. But reality cannot; It must be concrete (rather than an abstract), definite (rather than vague, approximate, etc.), and positive (rather than negative), whereas truths need not be any of these. Thus truths do not *correspond* to what the realities are, although their being truths is (loosely) dependent upon it of that. All truths have their "truth-makers" in reality—that is, there is (and must be) a "basis in concrete fact"

for every truth—an aspect of reality in virtue of which that truth is true.

To *characterize* reality—to "*agree*" with it—would be to give an accurate representation of it that is correct and complete in all relevant detail. Thus only a detailed (precise, exact, accurate) account of something can actually correspond to the reality of it. And this is something which our language-framed statements about the real—however true—almost invariably fail to achieve. An account that is vague, imprecise, approximate, fuzzy, or the like may well be *true* but nevertheless not be accurately consonant with it. The truth in general falls well short of the detailed accuracy that would be required here. No doubt the truth is *grounded* in reality, and concurs with it. But it certainly need not and often will not *correspond* to it.

Seeing that our true contentions regarding reality are generally indefinite (vague, ambiguous, metaphorical, etc.) whereas reality itself is always definite (precise, detailed, concrete), it follows that those truths of ours do not—cannot—give an adequate (faithful, accurate, precisely correct) account or representation of reality. It is a merciful fact of life in human communication that truth can be told without the determinative detail of precision, accuracy, and the like, required for an accurate representation of the facts. Reality's detail involves more than we can generally manage. We can achieve the truth and nothing but the truth, but the whole truth about something is always beyond our grasp.

There was a time when it was fashionable for English Hegelian philosophers such as Bernard Bosanquet to say that only the accurate truth is the real truth and that the real truth of things must be altogether exact and fully detailed. But this contention would involve us in critical errors of omission regarding the truth. Thus we would not be able to declare the truth that grass is green or the sky is blue. And moreover we would loose the crucial principles that the logico-conceptual consequences of the truth must also be true, seeing that the inference from "There are 48 people in the room" to its vague logical consequence

"There are several dozen people in the room" would now not qualify as correct, since the later would not qualify as a truth. The truth is one thing, and the *precise* truth or the *exact* truth quite another.[9] Our truths need surely not convey the detailed nature of the realities that make them so.

## 5. Reality Involucrates Exactness

To be sure, it has long been said by philosophers that truth is a matter of correspondence to reality, of "adequation" to fact (*adaequatio ad rem*), and that for a statement to be true about a matter of descriptive fact it must "tell it as it is." For it is clear in the light of the preceding deliberations that this contention must be carefully qualified. While there must indeed be accord or agreement, it need go only so far. Adequation construed as concurrence or accord is appropriate, but construed as correspondence or alignment or depiction is not.

The salient point here is that while reality itself cannot be indeterminate (inexact, vague, etc.) the truth certainly can be so. It is true that yon creature (a giraffe) is long-necked. To acknowledge this as a truth and a fact is unquestionably to describe reality (albeit in a somewhat vague and indefinite way). Such claims are true *of* reality but not true *to* it. They do not accurately and adequately represent (portray, depict, characterize) as it is, but only convey the general idea of it. Reality determines and, if you will, *grounds* such a truth, but it does not *correspond* to it. And so while those descriptively imperfect statements present truth about reality alright, they nevertheless fail to afford an adequately detailed representation or depiction of it.

Granted, if you were to know the whole of the detailed truth about reality you would have access to the whole of the truth. But the converse does not hold. No matter how much imprecise knowledge we have of something, its precise detail will not be fixed thereby. No matter how many telescopes we train on the moon, the precise detail of its landscape will elude our sight.

Two principal points emerge from these deliberations:

1. Only descriptively determinate truths actually characterize reality—that is, correspond or adequate to it. Descriptively indeterminate truths do not do so, seeing that reality as such is determinate. And not only is there no strict correspondence or correlation between descriptively determinate truths and descriptively indeterminate ones, but actually
2. No prolification of descriptively indeterminate truths suffice to provide an inferential basis of premisses for which a descriptively determinate result can be secured deductively. No amount of talk in language of vagueness and approximates will pin matters down definitely.

The idea that truth is a matter of correspondence or adequation to reality must accordingly be abandoned. There are many inexact or approximate truths, but there is no inexact or appropriate reality. Inexact (vague, imprecise) truth may reflect reality, but they cannot specify, characterize, or adequately describe it. A detailed reality cannot adequately be represented by a vague account of it, however true that account may be as far as it goes.

And so, we cannot expect to capture the detail of reality with our imprecise discourse.[10] The contrast between the descriptive definiteness of reality and the descriptive imprecision of the discourse that we employ in its characterization make for a pervasive, almost inevitable discrepancy here. A particular creature cannot just be an elephant, it must be of the African or Asian variety. It cannot just be very large or heavy but must be a certain particular.

The reason why our claims regarding reality generally fall short inheres in our human condition as beings whose knowledge is mediated by language. The descriptive discourse at our disposal is incomplete and inaccurate, invariably in need of precisification and clarification. Our linguistic resources are replete with unclarity and inexactness, ever admitting further questions about the purport of what has been said. While reality

is interrogatively complete, our discourse about it certainly is not: we are constantly constrained to use loose terminology and fill our discourse with expressions on the order of "roughly," "approximately," "something like," "in the neighborhood of" "as a ballpark induction," "in his 70's," "some 6 feet tall," and so on and on. The omnipresence of unclear and imprecise terms throughout language means that looseness and indefiniteness are pervasive in our discourse in a way that invariably invites explanation and clarification of what we say.

Considering the limitedness of language in a limitlessly complex world we find that language does not achieve a tight fit to reality. How many grains of sand does it take to make up a heap? Where does blue leave off and green begin? Just when does one leave off being young and become middle aged? All such questions have no exact answer because our language remains silent on the subject. It lacks the precision needed to convey the nature of reality in a precise and truthful way, but manifests an unavoidable deficiency of detail in this regard.

All the same, it is important to realize that imprecision does not stand in the way of truth. An indecisive, ambiguous, or even disjunctive proposition can be true despite reality's infeasibility of being like that. It is a crucial feature of our knowledge of fact that it neither need actually be nor even need to be claimed to be exact. I can realize—and realize correctly—that some sort of bird is hopping in the bush without having a clue as to what type of bird it is. Its vagueness renders my knowledge inexact and, if you will, incomplete—but certainly not incorrect.

However, while reality involucrates exactness, human planning and acting does not. We live and act in the realm of reality but think and decide in the realm of appearance.

## 6. Reality Involucrates Completeness

Can anything be said with assured confidence about reality that is *counter-indicated* by its appearance as human inquiry presents

it? Certainly nothing at the level of specific detail—of particular facts. But at the level of theoretical generalities there is indeed something to be said.

*Consistency*: Whenever *x* is a real object of some kind and *F* is a fully specific property applicable to objects of this kind, then we never have it that *X* both has *x* and lacks it, so that never both *Fx* and not-*Fx*. (That both *p* and not-*p* cannot obtain conjointly is the Principle of Contradiction.) The definiteness of the predicates at issue is clearly a crucial requisite here. For if *F* shall be respect-differentiated then it would apply to *x* in one respect and yet not in another (so that seemingly *Fx* and not-*Fx*) or else would fail to apply with *x* in one respect and yet also fail to apply to *x* in the other (so that seemingly neither *Fx* nor not-*Fx*).[11]

*Detail*. There is going to be a range of descriptive detail to reality vaster than anything that our characterization of it could ever afford. Our putative knowledge of reality may be imprecise or undeterministic. Reality itself must be fully detailed.

*Complexity*. Each time we extend the information we have at hand with regard to the composition and operation of the real we discover that there is more complexity than we had thought. Truth may or may not be stranger than fiction, but reality is bound to prove more complex than it appears in our cognitive.

*Consistency*. Our putative knowledge of reality may contain anomalies and even contradictions. But, as F. H. Bradley insisted this cannot be the case with reality itself.

*Systematicity*. Our putative knowledge of reality may overall prove to be discontent, disconnected, incoherent. But this would be (as with reality itself) where everything must dovetail smoothly into systemic coordination, unity, and coherence.

*Coherence*. Thus suppose that we make only a very small alteration in the descriptive composition of the real, say by adding one

pebble to the river bank. But which pebble? Where are we to get it and what are we to put in its place? And where are we to put the air or the water that this new pebble displaces? And when we put that material in a new spot, just how are we to make room for it? And how are we to make room to the so-displaced material? Moreover, the region within six inches of the new pebble used to hold $N$ pebbles. It now holds $N + 1$. Of which region are we to say that it holds $N - 1$. If it is that region yonder, then how did the pebble get here from there? By a miraculous instantaneous transport? By a little boy picking it up and throwing it. But then, which little boy? And how did he get there? And if he threw it, then what happened to the air that his throw displaced which would otherwise have gone undisturbed? Here problems arise without end.

*Completeness.* Above all, reality involucrates completeness. Whenever $x$ is a real object of some kind and $F$ is a fully specific property that is applicable to objects of this kind, then either $x$ has $F$ or $x$ lacks it, so that always either $Fx$ or not-$Fx$. (That either $p$ or not-$p$ should obtain is the Principle of Excluded Middle.) Here completeness means that if $x$ is a specific and particular object of some sort and $F$ is a definite and well-defined feature or property relevant to objects of the type to which $x$ belongs, then either $Fx$ or $\sim Fx$ (but not both) will obtain. Both of these principles have figured prominently in philosophical deliberations since Aristotle's day.

*Detail.* Whenever $x$ is an existing concrete object of some kind and $F$ an $x$-characterizing feature that admits of exactness and precision, then $x$ has $F$ in full and precise detail (Principle of Specificity) In its nature, reality has to be specifically this or that—and exactly so much of it. An apple tree cannot just have roughly or approximately 50 branches, it must have some particular number of them. A fly cannot simply have "a lot of eyes" it must have some definite quantity. A rock cannot just be "roughly a kilo in weight" it must be a definite weight of some sort. Reality itself must be one way or the other—and to just

exactly so much of an extent. Its descriptive nature is not only determinate but *precisely* determinate.

Reality, it is fair to say, is a chaotic system as this idea nowadays figures in physics. Every hypothetical change in the physical make-up of the real—however small—sets in motion a vast cascade of further such changes either in regard to the world's furnishings or in the laws of nature. For as we conjure with those pebbles, what about the structure of the envisioning electromagnetic, thermal, and gravitational fields? Just how are these to be preserved as was given the removal and/or shift of the pebbles? How is matter to be readjusted to preserve consistency here? Or are we to do so by changing the fundamental laws of physics. The quest for completeness moves on *ad indifinitum*.

And what is true at the physical level here holds at the ontological level as well. For it is readily seen that we cannot make hypothetical alterations in the make-up of the real without thereby setting out on a course that raises an unending series of questions. And not only do *content-redistributions* raise problems but so do even mere *content-erasures*, mere cancellations, because reality being as is they require redistributions to follow in their wake. If by hypothesis we zap that book on the self out of existence, then what is it that supports the others. Just exactly when and how did it disappear? And if it just vanished a moment ago then what of the law of the conservation of matter? And whence the material that is now in that book-denuded space? Once more we embark upon an endless journey.

And there is yet more. For the causality and accordingly interactive state of things in nature's realm is an interwoven fabric where the severing of any thread unravels the whole with results and consequences that are virtually impossible to discern in advance.

And this situation obtains at the deeper level of logical general principles. For the fact is that the interlinkage of our beliefs about the real is such that belief-contravening suppositions always function within a wider setting of accepted beliefs $B_1$,

$B_2, \ldots, B_n$ of such a sort that when one of them, for simplicity say $B_1$, is abandoned owing to a hypothetical endorsement of its negation, nevertheless the resulting group $\sim B_1, B_2, \ldots, B_n$ still remains collectively inconsistent. And the reason for this lies in the logical principle of *the systemic integrity of fact*. For suppose that we accept $B_1$. Then let $B_2$ be some other claim that we flatly reject—one that is such that we accept $\sim B_2$. Initially, however, since we accepted $B_1$, we will certainly also have accepted $B_1$ or $B_2$. But now consider the group of accepted theses: $B_1$, $B_1$ or $B_2$, $\sim B_2$. When we drop $B_1$ here and insert $\sim B_1$ in its place we obtain $\sim B_1$, $B_1$ or $B_2$, $\sim B_2$. And this group is still inconsistent. The structure of fact is an intricately woven fabric. One cannot sever one part of it without unraveling other parts of the real. Facts engender a *dense* structure, as the mathematicians use this term. Every determinable fact is so drastically hemmed in by others that even when we erase it, it can always be restored on the basis of what remains. The fabric of fact is woven tight. Facts are so closely intermeshed with each other as to form a connected network. Any change anywhere has reverberations everywhere. And this condition of things is old news. Already in his influential *Treatise on Obligations*[12] the medieval scholastic philosopher Walter Burley (*ca.* 1275–*ca.* 1345) laid down the rule: *When a false contingent proposition is posited, one can prove any false proposition that is compatible with it.* His reasoning was as follows. Let the facts be that:

(*P*) You are not in Rome.
(*Q*) You are not a bishop.

And now, of course, also:

(*R*) You are not in Rome or you are a bishop (*P* or not-*Q*).

All of these, so we suppose, are true. Let us now posit by way of a (false) supposition that:

Not-(*P*) You are in Rome.

Obviously (*P*) must now be abandoned—"by hypothesis." But nevertheless from (*R*) and not-(*P*) we obtain:

You are a bishop. (Not-*Q*)

And in view of thesis (*Q*) this is, of course, false. We have thus obtained not-*Q* where *Q* is *an arbitrary true proposition.*

It is clear that this situation obtains in general. For let *p* and *q* be any two (arbitrary but nonequivalent) facts. Then all of the following facts will also of course obtain: $\sim(\sim p)$, $p \,\&\, q$, $p \vee q$, $p \vee \sim q \vee r$, $\sim p \vee q$, $\sim(\sim p \,\&\, q)$, etc. Let us focus upon just three of these available facts:

(1) $p$
(2) $q$
(3) $\sim(\sim p \,\&\, q)$ or equivalently $p \vee \sim q$

Now let it be that you are going to suppose not-*p*. Then of course you must remove (1) from the list of accepted facts and substitute:

(1') $\sim p$

But there is now no stopping. For together with (3) this new item at once yields $\sim q$, contrary to (2). Thus that supposition of ours that runs contrary to accepted fact (viz., not-*p*) has the direct consequence that *any other arbitrary contingent truth must also be abandoned.*

This circumstance—Burley's Principle, as it should be called—has far-reaching implications. As far as the logic of the situation is concerned, you cannot change anything in the domain of fact without endangering everything. The domain of fact has a systemic integrity that one disturbs at one's own cognitive peril: a change at any point has reverberations everywhere. Once you embark on a reality-modifying assumption, then as far as pure logic is concerned all bets are off. At the level of abstract logic,

the introduction of belief-contravening hypotheses puts everything at risk: nothing is safe any more. To maintain consistency you must revamp the entire fabric of fact, which is to say that you confront a task of Sisyphusian proportions. (This is something that people who make glib use of the idea of other possible worlds all too easily forget.) Reality is something too complex to be remade more than fragmentally by our thought, which can effectively come to terms only with piecemeal changes *in* reality, but not with the comprehensive changes *of* reality to which fact-containing hypotheses invariably lead. Reality has a grip upon us that it will never entirely relax.[13]

## 7. The Lesson

By the very nature of what is conceptually at issue, reality demands detail, coherence, completeness, consistency, and their congeners. This, of course, makes for an inevitable gulf between reality itself and our knowledge of it. While reality cannot *conflict* with true thought it will certainly not be captured by it.

Our very *conception* of reality involucrates certain features as essential to it by its very nature. Specifically, it is understood to be descriptively definite and descriptively detailed. The former, definiteness, means that for any descriptive characterization, reality either has it or not. (The Law of Excluded Middle holds.) And the latter, detailedness, means that there is more to be said about a real thing than we can ever actually manage—that unlike fictional objects, realia have unending descriptive depth. (Moreover, it goes almost without saying that reality is consistent—that the Law of Contradiction holds with respect to its discipline.)

On this basis it is clear that our statements can be true of rationality without being faithful to it. A true statement can be disjunctive ("There are three or four rabbits in the cage") but reality must have it one way or the other. A true statement can be

vague ("The lake's water is bluish"), but reality must pick a definite shade. Talk about the real can be vague, indefinite, imprecise, approximate without sacrifice of truth. But while reality will not disagree or contradict, it certainly does not *correspond* to make characterization of itself. To say that truth corresponds to reality is decidedly to oversimplify matters.

And so, since our knowledge of matters of fact—our knowledge-*that* is counterdistinguished from our knowledge-*how*—is always formulated verbally, and will, when correct, be encorporated in *truths*, it follows that this knowledge can fail to do justice to reality without thereby compromising its claims to afford knowledge. Thus, for example, our knowledge of the real can be vague or imprecise without this sort of things affecting reality itself. And so, while one must grant that the appearances do not afford a detailed account of reality it must nevertheless be acknowledged that on many specific issues the appearances can—and often do—provide a true (even where not altogether faithful) account of the reality of things.

And so, it would, in the end, seem to be only right to award realism the palm of victory in its contest with nominalism. For the long and short of it is that the domain of reality-characterizing fact inevitably transcends the limits of our capacity to *express* it, and *a fortiori* those of our capacity to canvas completely. In the description of concrete particulars we are caught up in a quicksand of inexhaustible detail: There are always bound to be more descriptive facts about the world's real things than we are able to capture explicitly with our linguistic machinery. Given that concrete reality is—so we cannot but suppose—endlessly complex, detailed, and diversified in its make-up, the limitedness of our recursively constituted linguistic resources means that our characterizations of the real will always fall short.

This discrepancy between factual reality and cognized truth is perhaps not as ominous as first thought suggests. Granted the recursive nature of language, we can at most and at best deal with denumerably many possibilities in the specific/particular/individualized mode of dealing with possibilia. But there is of

course no comparable limitation as regards dealings in a generic/schematic, generalized mode. We can unproblematically say *that* every integer is either odd or even. But we cannot possibly say *of* every integer that *it* is either odd or even.

We must, accordingly, distinguish between two very different modes of reference, namely specific *mention* and generic *allusion*. The situation at issue pivots on the distinction between *particular* facts that truths specifically identify as such, and the *generic* and group-collectivized facts to which one merely alludes with generality.

The distinction between the specificity of $(\exists x)KFx$ and the generic abstractness of $K(\exists x)Fx$ is critical here when $K$ repeats "It is known" [or even merely "I know"]. Think here of the difference between considering particular real numbers such as $\sqrt{2}$ or $\pi$, and referring to real numbers at large via such statements as "For any real number $x$ we have it that $x + 1 = 1 + x$." Notwithstanding its larger generality there will only ever be a denumerable number of illustrations of this truth. Given the recursive nature of symbolism, only a denumerable number of reals can ever be specifically identified and individually considered. Yet nevertheless the limited resources that are at our disposal make it possible to discuss the transfinite vastness of reals at large. We can indeed obtain cognitive access here—but only at the level of abstract generality. For no recursively articulated set of truths can encompass the entire manifold of detailed fact.

Still, notwithstanding the limited resources that are at our disposal make it possible to discuss the transfinite vastness of reals at large. We can indeed obtain cognitive access here—but only at the level of deparicularized group-correlative schematic generalizations. We can discuss transfinitely many facts collectively and allusively, but cannot come to grips with them distributively and specifically by way of individualized mention. Those facts about infinite collections that can only be established by coming to terms with particularities not extractable from generalities are put totally beyond reach by the quantitative discrepancy at issues.

Chapter 3

# Cognitive Access to Reality

## Synopsis

(1) The linkage of truth to reality is more complex than might appear. (2) Our knowledge of reality can be—and often is—authentic and correct in detail, though overall it is limited and decidedly imperfect. (3) This stance towards reality points to a realism of sorts specifically of an epistemic sort. (4) Reality's complexity means that its cognitive depth is bottomless. (5) In inquiry we do our imperfect best and presume that it is good enough. (6) But what is initially a presumption is ultimately retro-justified by experience. (7) Circularity of reasoning is indeed on the scene here, but it is virtuously self-sustaining rather than viciously self-defeating.

## 1. *Adaequatio Ad Rem*: On the Conformity of Thought and Reality

The scholastics saw the hallmark of truth to lie in an "adequation" to reality—*adaequatio intellectus et rei* as St. Thomas put it—this being understood[1] as a matter of conformity or agreement or accord. It should be clear that this idea is deeply problematic.

Various simple examples serve to establish this. Suppose it to be true that John is either in London or in New York. But reality cannot be disjunctive. It cannot put John in the non-place that is London-or-New York: it has to make up its mind and put John in the one city or the other. The indecisive statement that puts

John in London or New York just does not agree with or conform to the definite reality that puts John into just exactly one of these places. Truths can be vague, disjunctively noncommittal, analogical. Reality must be exact, determinate, literal. There simply need not be any "correspondence" here.

The long and short of it is that truth and reality do not *conform* or correspond to each other. Nor yet do truths *depict* reality. The relationship is complicated because what reality does is to *ground* the truth. Reality is a truth-maker: it is because reality is what it is that the truth is what it is. The truth "agrees" with reality only in the minimal sense of *not conflicting* with it. But true proposition can fail to survive *some* change in reality simply because there are bound to be some other truths that are irrelevant to it.

Accordingly, the linkage of truth to reality is far from straightforward. Truth can often survive substantial changes in reality. Thus $p \vee q$ may be true only because $p$ is really the case, though nevertheless, even if $p$ failed, $q$ might come to the rescue. And so, while the linkage of truth and reality is real alright, it is collective rather than distributive. Any change in reality will engender a truth-status charge in *some* propositions. And conversely any change in the truth-status of a proposition will require *some* change in reality. But it is difficult to carry this systemic and holistic causation down to the level of speculative detail. The wall's color can change without affording the truth of the claim that it is greenish. And changing the truth status of the claim "$p \,\&\, q \,\&\, r$" from true to false can leave much of reality ($p$, $q$, and $r$ included) altogether unaffected. To be sure, changing the truth status of a proposition always requires *some* change in the make-up of reality. In this respect truth *supervenes* upon the nature of reality (as the philosophical jargon of the day has it).

## 2. On Our Knowledge of Reality

When we claim that something *actually is* so, rather than that it *merely seems* so—and thereby purport to talk about reality rather

than appearance—some rather strong controls must be in place thanks to the far-reaching nature of these claims. One key test of our grip on reality lies in the adequacy of our putative knowledge in point of its overall systematicy of coordination. And in this regard there is a good deal that we can reasonably claim to be really and truly so. All the same, given what we realize about the imperfections of our knowledge, we cannot but acknowledge that our cognitive hold on reality has its limitations.

The coherence of our knowledge is its strongest credential in relation to realism. Long ago, G. W. Leibniz wrote as follows:

> Let us now see by what criteria we may know which phenomena are real. We may judge this both from the phenomena itself and from the phenomena which are antecedent and consequent to it as well. We conclude it from the phenomenon itself if it is vivid, complex, and internally coherent [*congruum*]. It will be vivid if its qualities, such as light, color, and warmth, appear intense enough. It will be complex if these qualities are varied and support us in undertaking many experiments and new observations; for example, if we experience in a phenomenon not merely colors but also sounds, odors, and qualities of taste and touch, and this both in the phenomenon as a whole and in its various parts which we can further treat according to causes. Such a long chain of observations is usually begun by design and selectively and usually occurs neither in dreams nor in those imaginings which memory or fantasy present which the image is mostly vague and disappears while we are examining it. A phenomenon will be coherent when it consists of many phenomena, for which a reason can be given either within themselves or by some sufficiently simple hypothesis common to them; next, it is coherent if it conforms to the customary nature of other phenomena which have repeatedly occurred to us, so that its parts have the same position, order, and outcome in relation to the phenomenon which similar phenomena have had. . . . And this criterion can be referred back to another general

> class of tests drawn from preceding phenomena. For the present phenomenon must be coherent with these if namely, it preserves the same consistency or if a reason can be supplied for it from preceding phenomena or if all together are coherent with the same hypothesis, as if with a common cause. But certainly a most valid criterion is a consensus with the whole sequence of life, especially if many other observers affirm the same thing to be coherent with their phenomena also. (Leibniz, G. W., *Philosophische Schriften*)

And in much the same vein, Immanuel Kant wrote:

> Not every intuitive representation of outer things involves the existence of these things, for their representation can very well be the product merely of the imagination (as in dreams and delusions). Such representation is merely the reproduction of previous outer perceptions, which, as has been shown, are possible only through the reality of outer objects. All that we have here sought to establish is that inner experience in general is possible only through outer experience in general. Whether this or that supposed experience be not purely imaginary, must be ascertained from its special determinations, and through its congruence with the criteria of all real experience.[2]

Yet notwithstanding his ruminations to the contrary, even Kant himself was led to accept an *empirical* reality encompassed in those phenomena over which we have exercised adequate cognitive controls. Can philosophical deliberations take us any further?

## 3. Reality and Our Knowledge of It

Whatever can be *known* by us humans to be real must of course, for that very reason, square with the reality of things. But does

the converse hold? Is what is real for that very reason also automatically knowable? Is it appropriate to join C. S. Peirce who, in rejecting "incognizables," insisted that whatever is real must be accessible to cognition—and indeed must ultimately become known? And so the question arises: Is humanly cognizable reality the only sort of reality there is? Some philosophers certainly say so, maintaining that there actually is a fact of the matter only when "we [humans] could in finite time bring ourselves into a position in which we were justified either in asserting or in denying [it]."[3] On such a view all reality is inevitably *our* reality. What we humans are not in a position to domesticate cognitively—what cannot be brought home to us by (finite!) cognitive effort—simply does not exist as a part of reality at all. Where we have no cognitive access, there just is nothing to be accessed. On such a perspective we are led back to the *homo mensura* doctrine of Protagoras: "Man is the measure of all things, of what is, that it is, of what is not, that it is not."

In reflecting on the issue in a realistic mood, one is tempted to ask: "Just who has appointed us to this exalted role? Why should it be that *we humans* qualify as the ultimate arbiters of reality as such?"

To be sure, it is possible to reduce the gap between fact and cognition by liberalizing the idea of what is at issue with cognizers. Consider the following series of metaphysical theses: *For something to be real in the mode of cognitive accessibility it is necessary for it to be experientiable by,*

1. *Oneself.*
2. *One's contemporary (human) fellow inquirers.*
3. *Us humans (at large and in the long run).*
4. *Some actual species of intelligent creatures.*
5. *Some physically realizable (though not necessarily actual) type of intelligent being—creatures conceivably endowed with cognitive resources far beyond our feeble human powers.*
6. *An omniscient being (i.e. God).*

This ladder of potential knowers is critically important for our present deliberations regarding the idea that to be is to be knowable. For here the question "By whom?" cannot really be evaded.

The idea of an experiential idealism that equates reality with experientiality is one that can accordingly be operated on rather different levels. Specifically, the "*i*-th level" idealist maintains—and the "*i*-th level" realist denies—such a thesis at the *i*-th stage of the preceding six-entry series. On this approach, the *O*-th level idealist is simply the solipsist, and idealism as such emerges as an experientiability theory of reality that equates truth and reality with what is experientially accessible to by "us"—with different, and potentially increasingly liberal, constructions of just who is to figure in that "us group" of qualified cognizers. But of course no *sensible* idealist maintains a position as strong as the egocentrism of the first two entries on the list. Equally it is presumably the case that no *sensible* realist denies a position as weak as the deocentrism of that last item. The salient question is just where to draw the line in determining what is a viable "realistic/idealistic" position.

Let us focus for a time upon the third entry of the above listing, the "man is the measure," *homo mensura* doctrine. By *this* standard, Peirce would qualify as a *homo mensura* realist, seeing that he would confine the real to what we humans can come to know. But this is strong stuff. Of course, what people can *know* to be real constitutes (*ex hypothesi*) a part or aspect of reality-at-large. That much is not in question. But the bone of contention between *homo mensura* idealism and a sensible realism is the question of a surplus—of whether reality may have parts or aspects that outrun altogether the reach of human cognition. And seen in this light the *homo mensura* doctrine is implausible. For in the end, what we humans can know is not and cannot be decisive for what can (unqualifiedly) be known. On this basis reality should be seen as mind-transcendent, just as traditional realism has always maintained.

Regarding this doctrine that what is real must be knowable, traditional realism takes an appropriately conservative line. It insists on preserving, insofar as possible, a boundary-line of separation between ontology and epistemology; between fact and knowledge of fact, between truth-status possession and truth-status decidability with respect to propositions and between entity and observability with respect to individual things. As the realist sees it, reality must be presumed to have depths that cognition may well be unable to plumb.

C. S. Peirce was surely correct in insisting that a mind that evolves in the world via natural selection has a link to reality sufficiently close to enable it to secure *some* knowledge of the real. But the converse is eminently problematic. It is a dubious proposition that so close a linkage obtains here that *only* what is knowable for some actual being should be real—that reality has no hidden reserves of fact that are not domesticable within the cognitive resources of existing creatures (let alone one particular species thereof!). Accordingly, it seems sensible to adopt the "idealistic" line only at the penultimate level of the above listing and to be a realist short of that. And just this is, in effect, the position of the casual-commerce realism espoused at the outset of the present discussion. As such a position has it, the most plausible form of idealism is geared to that next-to-last position which takes the line that "to be real is to be causally active—to be a part of the world's causal commerce." And since one can always hypothesize a creature that detects a given sort of causal process, we need not hesitate to equate reality with experientiability in principle. On this basis, we arrive at an idealism that owes its viability and plausibility through its comparative weakness in operating at the next-to-last level, while at all of the earlier, more substantive levels our position is effectively realistic. But the result is a halfway-house compromise position that combines an idealism of sorts with a realism of sorts.

A middle-of-the-road position of this description holds that what is so as a "matter of fact" is not necessarily cognizable by "us" no matter how far—short of God!—we extend the boundaries of

that us-embracing-community of inquiring intelligences. On the other hand, one cannot make plausible sense of "such-and-such a feature of nature is real but no possible sort of intelligent being could possibly discern it." After all, what is real in the world must make some difference to it, that is *in principle* detectable. Accordingly *being* and *being knowable-in-principle* can plausibly be identified.[4] The crucial contrast thus is not that between reality and knowability but rather between what is knowable by us and what is knowable in principle, all anthropocentric parochialism aside. But a narrow-minded *homo mensura* realism would seem to be untenable. For there is no good reason to resort to a hubris that sees our human reality as definitive on grounds of being the only one there is. Neither cosmologically nor otherwise are we the center around which all else revolves. After all, humans have the capacity not only for knowledge but also for imagination. And this very fact, that our conception of reality is such that it can in principle—and doubtless will in practice—project beyond the reach of our knowledge, speaks for a concurrent version of realism.

## 4. Cognitive Depth: The Complexity of the Real

The acknowledged shortcomings of our overall knowledge of the real have important implications for how we do and must view the nature of our knowledge of things. For as we standardly conceive the reals, the properties of any real thing are literally open-ended: we can always discover more of them. Even if we were to view the world (surely mistakenly) as inherently finitistic—espousing a Keynesian "principle of limited variety" to the effect that nature can be portrayed descriptively with the materials of a finite taxonomic scheme—there will still be no assurance that the progress of science will not lead over time to an indefinitely continuing series of changes of mind regarding this finite register of descriptive materials. And this conforms exactly to our expectation in these matters. For where the real

things of the world are concerned, we not only expect to learn more about them in the course of further scientific inquiry, but also we expect to have to change our minds about their nature and modes of comportment. Be the item at issue elm trees, or volcanoes, or quarks, we have every expectation that in the course of future scientific progress people will come to think about their origin and their properties differently from the way we do at this juncture. In sum, real things—actually existing physical objects—have a cognitive depth whose bottom we cannot possibly plumb.

Clearly, then, as we standardly think about things within the conceptual framework of our fact-oriented thought and discourse, *any* real physical object has more facets than it will ever actually manifest in experience. And what holds for things holds for laws as well. Lawfulness too is evidence transcendent. After all, our information about things has to be secured through experience, and experience is always episodic and finite—our experiences can always be inventoried in some limited list. Thus we can never determine that "All evergreens are deciduous" but only that such-and-such evergreens we have actually observed have regularly shed their leaves in the winter. Accordingly, it transpires that universal statements bound to step beyond the range of actually available information. And so by their very nature lawful claims invoke a generality that cannot be achieved within the finite limits of actual experience and so transcend the information we can ever mange to secure. And even as the previous section argued that our conception of any and every *concrete real-world object* is evidentially transcendental, so we must also acknowledge that this is going to hold for all of our lawful generalizations as well.[5]

The paradigmatic existents are the real things of this world. And—to reemphasize—this reality is endlessly complex in its details. As we standardly think about particulars within the conceptual framework of our factual deliberation and discourse, *any* real concrete particular has more features and facets than it will ever actually manifest in experience. Moreover, real things

are invariably concrete,[6] and concrete things not only have more properties than they ever *will* overtly manifest, but they have more properties than they ever *can* possibly actually manifest. This is so because the dispositional properties of things always involve what might be characterized as *mutually preemptive* conditions of realization. This lump of sugar, for example, has the dispositional property of reacting in a particular way if subjected to a temperature of 10,000°C and of reacting in a certain way if emplaced for 100 hours in a large, turbulent body of water. But if either of these conditions is ever realized, it will destroy the lump of sugar as a lump of sugar, and thus block the prospect of *its* ever bringing the other property to manifestation. The severally *possible* realization of various dispositions will always fail to be mutually *compossible*, so that the dispositional properties of a real thing cannot ever be manifested completely—not just in practice, but in principle. Our objective claims about real things always commit us to more than we can actually ever determine about them. Our information about things is always simply the visible part of the iceberg. There is always more to reality than meets the eye of appearance.

The existence of this latent (hidden, occult) sector is a crucial feature of our conception of a real thing. Neither in fact nor in thought can we ever simply put it away. To say of this apple that its only features are those it actually manifests is to run afoul of our conception of an apple. To deny—or even merely to refuse to be committed to the claim—that it *would* manifest certain particular features *if* appropriate conditions came about (for example, that it would have such-and-such a taste if eaten) is to be driven to withdrawing the claim that it is an apple. The latent, implicit ramifications of our objective factual claims about something real is potentially endless, and such judgments are thus "non-terminating" in C. I. Lewis' sense.[7] The totality of fact about a thing—about any real thing whatever—is in principle inexhaustible and the complexity of real things is in consequence descriptively unfathomable. Endlessly many true descriptive remarks can be made about any particular actual

concrete object. For example, take a stone. Consider its physical features: its shape, its surface texture, its chemistry, etc. And then consider its causal background: its subsequent genesis and history. Then consider the multitude of functional aspects reflected in its uses by the stonemason, or the architect, or the landscape decorator, etc. There is, after all, no end to the perspectives of consideration that we can bring to bear on things. The botanist, herbiculturist, landscape gardener, farmer, painter, and real estate appraiser will operate from different cognitive "points of view" in describing one selfsame vegetable garden. And there is in principle no theoretical limit to the lines of consideration available to provide descriptive perspectives upon a thing.

It follows from these considerations that we can never justifiably claim to be in a position to articulate "the whole truth" about a real thing. The domain of thing-characterizing fact inevitably transcends the limits of our capacity to *express* it, and *a fortiori* those of our capacity to canvas it completely. In the description of concrete particulars we are caught up in an inexhaustible detail: It is a crucial facet of our epistemic stance toward the real world that there is always more to be known than what we now explicitly have. Every part and parcel of reality has features lying beyond our present cognitive reach—at *any* "present" whatsoever.

As we increase the power of our particle accelerators, our view of the makeup of the physical world becomes not only ever different but also ever stranger. There is, as best we can tell, no limit to the world's ever-increasing complexity that comes to view with our ever-increasing grasp of its detail. The realm of fact and reality is endlessly complex.[8]

## 5. The Impetus of Presumption

Philosophers nowadays often resort to the idea of validating a contention as a matter of "inference to the best explanation."

Certain propositions are viewed as finite, and the to-be-validated thesis is seen as established through affording their best-achievable explanation. This approach is deeply problematic. The best (i.e., most probable) explanation of someone's sneezing is their having caught a cold, but people often sneeze who have no cold at all. Unless the term "best" is so gerrymandered as to mean "correct in this cast"—a step that would clearly trivialize the matter—inferring the best explanation has deep pitfalls. By contrast the idea of "inference to the best systematization"—the account which, everything considered, accommodates the overall manifold of available fact—will afford a more promising prospect. And in this light the policy of treating those appearances as veridical—as reality conforming—is both promising and plausible. And seen in this light, appearance is not a contra-distinguishing contrast to reality, but a resource that affords the basis for our best-available estimates of what reality is actually like.

To be sure, we realize full well that our claims about reality—even our altogether true and correct statements—can fail to characterize it accurately in point of exactness precision and detail. Our statements about reality can be true without telling the exact truth (let alone the *whole* truth). And the fault here cannot lie on the side of reality—which, after all, cannot actually be vague, imprecise, undetailed. For, on the classical conception of the matter, it lies in the very nature of the real to be descriptively determinate, and the onus of whatever ambiguity imprecision and indefiniteness there may be regarding it is something that lies at the door of our imperfect descriptions and characterizations of reality and not at that of the actual make-up of reality itself. The authentic reality of things is indicated not by putative knowledge as we have it but only by idealized knowledge we endeavor to develop. What we can actually secure is at best an *estimate* of the matter. We presume that this estimate is correct—but presumption is not certified knowledge.

The classical theories of perception from Descartes to the sense-datum theorists of the first half of the twentieth century all

faced a common difficulty. For all of them saw a real and deep problem to be rooted in the question:

> Under what circumstances are our actual experiences genuinely veridical? In particular: which facts about the perceptual situation validate the move from "I (take myself to) see a cat on the mat" to "There is a cat on the mat"? How are we to monitor the appropriateness of the step from "perceptual experiences" to actual perceptions of real things-in-the-world, seeing that experience is by its very nature something personal and subjective.

The traditional theories of perception—all encounter the roadblock of the problem: How do we get from here to there, from subjective experience to warranted claims of objective fact—for how things appear to what they are actually like?

However, what all these theories ignore is the fact that in actual practice we operate within the setting of a concept-scheme that reverses the burden of proof here: that our perceptions (and conceptions) are standardly treated as innocent until proven guilty. The whole course of relevant experience is such that the standing presumption is on their side. The indications of experience are taken as true provisionally—allowed to stand until such time (if ever) when concrete evidential counterindications come to view. Barring indications to the contrary, we can and do move immediately and unproblematically from "I take myself to be seeing a cat on the mat" to "There really is a cat on the mat and I actually see it there." But what is at issue here is not an *inference* (or a deriving) from determinable facts but a mere *presumption* (or a taking). The transition from subjectivity to objectivity is automatic, though, to be sure, it is always provisional, that is, subject to the proviso that all goes as it ought. For unless and until something goes amiss—i.e., unless there is a mishap of some sort—those "subjective percepts" are standardly allowed to count as "objective facts."

To be sure, there is no prospect of making an inventory of the necessary conditions here. Life is too short: neither in making

assertions nor in driving an automobile can one provide a comprehensive advance survey of possible accidents and list all the things that can possibly go wrong. But the key point is that in this context the linkage between appearance and reality is neither conceptual nor causal: it is the product of a pragmatic policy in the management of information, a groundrule of presumption that governs our epistemic practice.

The rational legitimation of a presumptively justified belief lies in the consideration that some generic mode of "suitably favorable indication" speaks on its behalf while no as-yet available counter-indication speaks against it. When, after a careful look, I am under the impression that there is a cat on the mat, I can (quite appropriately) base my acceptance of the contention "There is a cat on the mat" not on certain pre-established premisses, but simply on my experience—on my visual impression. The salient consideration is that there just is no good reason why (in *this* case) I should not indulge my inclination to endorse visual indications of this kind as veridical. (If there were such evidence—if, for example, I was aware of being in a wax museum—then the situation would, of course, be altered.)

With presumption we *take* to be so what we could not otherwise *derive*. This idea of such presumptive "taking" is a crucial aspect of our language-deploying discursive practice. For presumptively justified beliefs are the raw materials of cognition. They represent contentions that—in the absence of pre-established counter-indications—are acceptable to us "until further notice," thus permitting us to make a start in the venture of cognitive justification without the benefit of pre-justified materials. They are defeasible alright, vulnerable to being overturned, but only by something else yet more secure some other pre-established conflicting consideration. They are entitled to remain in place until displaced by something better. Accordingly, their impetus averts the dire consequences that would ensue of any and every cogent process of rational deliberation required inputs which themselves had to be authenticated by a prior process of rational

deliberation—in which case the whole process could never get under way.

It is crucial, however, that it be realized in this connection that putative reality is not a distinct realm; it is our best (albeit often imperfect) effort at depicting authentic reality. And it can be so despite the fact that the prospect of gaps between appearance and reality cannot be precluded.

## 6. Controls of Cognitive Adequacy: The Rationale of Retrojustification

Yet how is it that those realism-grounding presumptions become entitled to claims of rational appropriateness. The answer has already been foreshadowed. A twofold process is involved. Initially it is a matter of the generic need for answers to our questions: of being so circumstanced that if we are willing to presume we are able to get . . . anything. But ultimately we go beyond such this-or-nothing considerations, and the validity of a presumption emerges *ex post facto* through the utility (both cognitive and practical) of the results it yields. We advance from "this or nothing" to "this or nothing that is determinably better." Legitimation is thus available, albeit only through experiential *retrovalidation,* retrospective revalidation in the light of eventual experience. It is a matter of learning that a certain issue is more effective in meeting the needs of the situation than its available alternatives. Initially we look to promise and potential but in the end it is applicative efficacy that counts.

The fact is that our cognitive practices have a fundamentally economic rationale. They are all cost-effective within the setting of the project of inquiry to which we stand committed by our place in the world's scheme of things. Presumptions are the instrument through which we achieve a favorable balance of trade in the complex negotiation between ignorance of fact and mistake of belief—between unknowing and error.

We thus proceed in cognitive contexts in much the same manner in which banks proceed in financial contexts. We extend credit to our information sources, doing so at first to a relatively modest extent. When and as they comport themselves in a way that indicates that this credit was warranted, then we extend more. By responding to trust in a "responsible" way—proceeding to amortize the credit one already has—one can increase one's credit rating in cognitive much as in financial contexts.

In trusting the senses, in relying on other people, *and even in being rational*, we always run a risk. Whenever in life we place our faith in something, we run a risk of being let down and disappointed. But in such matters, no absolute guarantees can be had. And yet there is little choice about the matter: it is a case of "this or nothing." If we want answers to factual questions, we have no real alternative but to trust in the cognitively cooperative disposition of the natural order of things. We cannot pre-establish the appropriateness of this trust by somehow demonstrating, in advance of events, that it is actually warranted. Rather, its rationale is that without it we remove the basis on which alone creatures such as ourselves can confidently live a life of effective thought and action. In such cases, pragmatic rationality urges us to gamble on trust in reason, not because it cannot fail us, but because in so doing little is to be lost and much to be gained. A general policy of judicious trust is eminently cost effective in yielding useful results in matters of cognition.

We want and need objective information about "the real world." This, of course, is not to be had directly without the epistemic mediation of experience. And so we treat certain data as evidence—we extend "evidential credit" to them as it were. Through trial and error we learn that some of them do indeed *deserve* it, and then we proceed to extend to them greater weight—we "increase their credit limit" as it were and rely on them more extensively. And, of course, to use those data as evidence is to build up a picture of the world, a picture which shows, with the "wisdom of hindsight," how appropriate it was for us to use those evidential data in the first place.

The starting point of our justificatory reasoning was a basic project-facilitating postulation. Yet this does not tell the whole story. For there is also the no-less-important fact that this postulation obtains a vindicating retrojustification because the further we proceed on this basis, the more its obvious appropriateness comes to light. The pragmatic turn does crucially important work here in putting at our disposal a style of justificatory argumentation that manages to be cyclical without vitiating circularity. What is at issue is a matter of unavoidable presumptions whose specific mode of implementation is ultimately retrovalidated in the light of experience. With the wisdom of hindsight we come to see with increasing clarity that the project that these presuppositions render possible is an eminently successful one.

## 7. A Virtuous Circularity

Of course, when it comes to this issue of actual efficacy, we have no choice but to proceed experientially—through the simple stratagem of "trying and seeing." Functional requiredness remains a matter of *a priori* considerations, but efficacy—actual sufficiency to our purposes—will be a matter of *a posteriori* experience. It is, and is bound to be, a matter of retrojustification—a retrospective revalidation in the light of experience. And this empirically delivered pragmatic consideration that our praxis of inquiry and communication does actually work—that we can effectively and (by and large) successfully communicate with one another about a shared world, inquiry into whose nature and workings proceeds successfully as a communal project of investigation—is the ultimately crucial consideration that legitimates (through "retro-validation") the evidence-transcending imputations built into the objective claims to which we subscribe.

What we began with was a view of realism as a basic project-facilitating postulation. But this does not tell the whole of the justificatory story. For there is also the no less important fact that

this postulation obtains a vindicating retrojustification because the farther we proceed on this basis, the more its obvious appropriateness comes to light. With the wisdom of hindsight we come to see with increasing clarity that the project that these presuppositions render possible is an eminently successful one. And this pragmatic turn does crucially important work in putting at our disposal a style of justificatory argumentation that manages to be cyclical without vitiating circularity.

On this basis, the substantive picture of nature's ways that is secured through our empirical inquiries is itself ultimately justified, retrospectively as it were, through affording us with the presuppositions on whose basis inquiry proceeds. As we proceed to develop science there must come a retrojustificatory "closing of the circle." The world-picture that science delivers into our hands must eventually become such as to explain how it is that creatures such as ourselves, emplaced in the world as we are, investigating it by the processes we actually use, should do fairly well at developing a workable view of that world. As we saw in the preceding chapter's discussion of "rational selection," the "validation of scientific method" must and can in the end itself become scientifically validated. Though the process is cyclic and circular, there is nothing vicious and vitiating about it. The process of rationally validating our cognitive procedures must in the end be cyclical and close on itself in systematic consideration.

The substantive picture of nature's ways that is secured through our empirical inquiries is itself ultimately justified, retrospectively as it were, through validating the presuppositions on whose basis inquiry has proceeded. As we develop science there must come a "closing of the circle." The world-picture that science delivers into our hands must eventually become such as to explain how it is that creatures such as ourselves, emplaced in the world as we are, investigating it by the processes we actually use, should do fairly well at developing a workable view of that world. The "validation of scientific method" must in the end itself become

scientifically validated. Science must (and can) retrovalidate itself by providing the material (in terms of a science-based worldview) for justifying the methods of science.

The rational structure of the overall process of justification accordingly looks as follows:

1. We use various sorts of experiential data as evidence for objective fact.
2. We do this in the first instance for *practical* reasons, *faute de mieux*, because only by proceeding in this way can we hope to resolve our questions with any degree of rational satisfaction. But as we proceed two things happen:

   (i) On the pragmatic side we find that we obtain a world picture on whose basis we can operate effectively. (Pragmatic revalidation.)

   (ii) On the cognitive side we find that we arrive at a picture of the world and our place within it that provides an explanation of how it is that we are enabled to get things (roughly) right—that we are in fact justified in using our phenomenal data as data of objective fact. (Explanatory revalidation.)

The success at issue here is twofold—both in terms of understanding (cognition) and in terms of application (praxis). And it is this ultimate success that justifies and rationalizes, retrospectively, our evidential proceedings. Though the process is cyclic and circular, there is nothing vicious and vitiating about it. The reasoning at issue is not a matter of linear sequence but of a systemic coherence prepared to accept the circles and cycles of cognitive feedback.

We thus arrive at the overall situation of a dual "retrojustification." For all the presuppositions of inquiry are ultimately justified because of a "wisdom of hindsight" enables us to see that by their means we have been able to achieve both practical

success and a theoretical understanding of our place in the world's scheme of things. Here successful practical implementation is needed as an extra-theoretical quality-control monitor of our theorizing. And the capacity of our scientifically devised view of the world to underwrite an explanation of how it is that a creature constituted as we are, operating by the means of inquiry that we employ, and operating within an environment such as ours, can ultimately devise a relatively accurate view of the world is also critical for the validation of our knowledge. The closing of these inquiry-geared cycles validates, retrospectively, those realistic presuppositions or postulations that made the whole process of inquiry possible in the first place. Realism thus emerges as a presupposition-affording postulate for inquiry—a postulation whose ultimate legitimation eventuates retrospectively through the results, both practical and cognitive, which the process of inquiry based on those yet-to-be-justified presuppositions is able to achieve.

The retroactive component of the justification at issue is critical for present purposes. That *a priori* presumption of realism could be validated by the "essential presupposition" argument that if we do not proceed in this way then success in the projects at issue (inquiry and communication) simply becomes impossible. So far so good. But not quite enough. For this pivots the matter on the mere prospect of success. It does nothing to extend any sort of assurance that success will actually be attained. (We remain at the level of necessary conditions without embarking on the issue of sufficiency.) And this is something that can only be achieved *ex post facto*—after we actually go on to proceed with the process of inquiring. That this is achievable in a reasonable degree is something that has to be a matter of actual discovery. And it is here that the factor of pragmatic efficacy at issue with such retrojustification comes to play its critical role. The process is circular, but the circularity involved here is not vicious but benign.

And so, in the end, the harmonious closing of these inquiry-geared loops validates, retrospectively, those realistic

presuppositions or postulations that made the whole process of inquiry possible in the first place. Realism thus emerges as a presupposition-affording postulate for inquiry—a postulation whose ultimate legitimation eventuates retrospectively through the results, both practical and cognitive, which the process of inquiry based on those yet-to-be-justified presuppositions is able to achieve. In the end we achieve a realism all right, but one that is heavily indebted to pragmatic and idealistic lines of thought.[9]

Chapter 4

# Problems of Fallibilism

## Synopsis

(1) We realize full well that our knowledge of reality is in various ways incomplete and incorrect. For we cannot but acknowledge that there are decided limits to what we do—or even can—know about the real. Thus I cannot know that such-and-such a fact is unknown to me, nor yet can I (presently) realize that my (present) belief that *p* is the case is mistaken. (2) These lessons are inherent in the "Preface Paradox." (3) When we acknowledge our cognitive limitations we gain a clearer picture of exactly how and why our knowledge of reality can go amiss and what the broader implications of this situation are. (4) Oversimplification is a prime defect here in opening a pathway to discrepancy between reality and appearance. (5) And in scientific inquiry oversimplification is pretty much inevitable. (6) Confusion and conflation also raise their ugly heads. All this has large implications for our understanding of reality.

## 1. Specific vs. Indefinite Knowledge and Ignorance

"I am interested in reality, not in mere opinion: so tell me what the facts are, not merely what you think them to be." This, of course, is an unmeetable demand. As Kant insisted, the "I think" accompanies all of our convictions about the real. We can—and indeed do—realize *that* reality differs in some respects from what we think it to be. But we cannot proceed to implement this

realization by indicating *how* it differs. The *that* is accessible, the *how* is not.

The potential of fallibilism is built into our very conception of reality. We cannot avoid recognition of the imperfection of our putative knowledge about reality.

We realize full well that our information is incomplete and in some respects incorrect and that in consequence there are three prime potential deficiencies in our knowledge of reality. For in considering the contrast between reality and appearance, one is led to realize that there are many ways in which our beliefs about the former can go awry. Especially prominent among the modes of misrepresentation are:

- *Oversimplification* by omitting significant features that are there.
- *Overcomplexification* by introducing distributing factors that are not there.
- *Overestimation* by representing some factor as present to a greater extent than it actually is.
- *Underestimation* by representing some fact or as absent to a greater extent than it actually is.
- *Distortion* through misdescribing the make-up of the item at issue.

Some illustrations might prove useful. Suppose that the reality of the situation is as shown in Figure 1.

However, while these are particularly prominent modes of misapprehension, in the final analysis there is no end to the ways of going wrong. The possibility of error is all-pervading. Our putative knowledge of the real is plagued by the everpresent prospect of ignorance, error, inaccuracy, and confusion. Let us look more closely at the nature of these cognitive flaws.

Two importantly different sorts of "worlds" figure on the agenda when matters of knowledge are at issue, namely (1) the world as it actually is, the real world, and (2) the world as we think it to be—the *phenomenal* world. And as regards the latter three sorts of prospective deficiencies loom: (1) *error* of getting

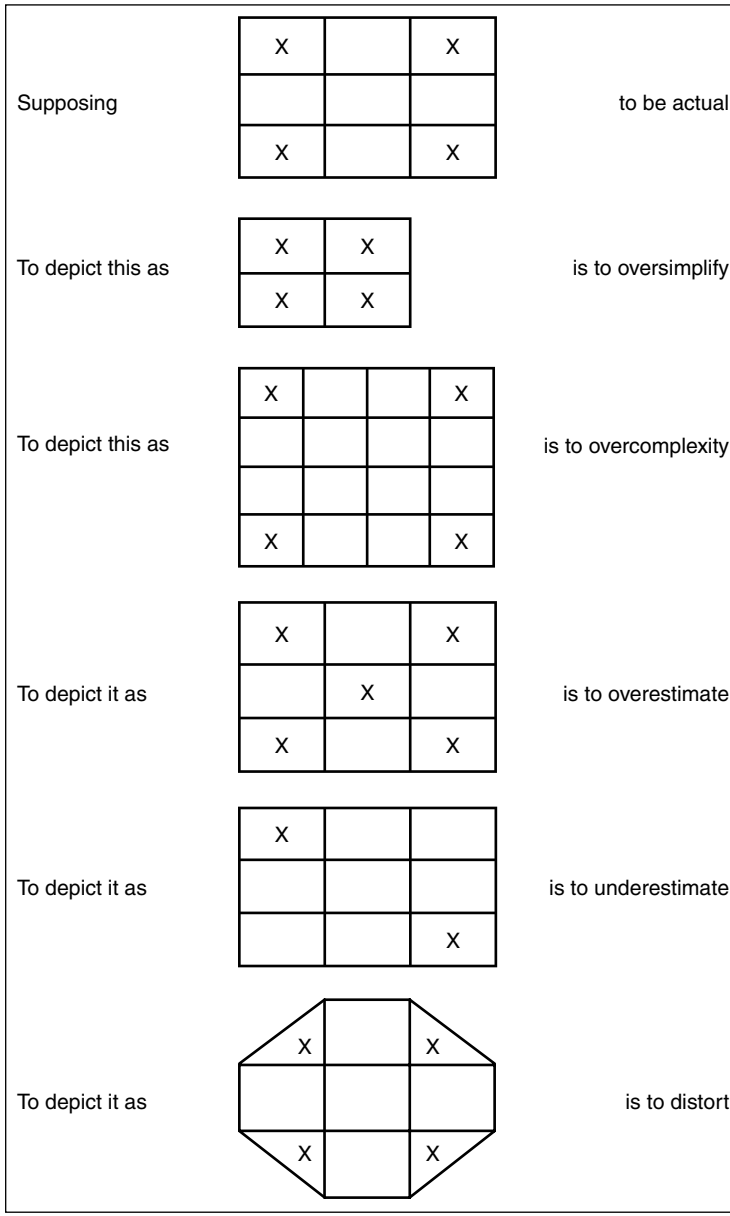



**Figure 1** Versions of reality

the facts wrong, (2) *uncertainty* or indecision about how the facts stand among identifiable alternatives, and (3) the sheer *ignorance or unknowing* of not having any idea as to what the possibilities are (let alone the facts) actually are. This condition of things is readily illustrated by contrasting as shown in Figure 2.

Here our world-picture exhibits three cognitive failings: *uncertainty* (indicated by ?), *ignorance* (indicated by blanks), and *error* (betokened by the incorrect entries in boldface. While we cannot identify our *present* errors, incompleteness is something we can often locate with definiteness—simply by indicating questions that we cannot satisfactorily answer. And on this basis we can also indicate places where our knowledge is inaccurate because there is a limit to the precision that our answers can achieve. (We cannot say with accuracy just how many cars are at this moment on New York's Broadway.)

It lies in the nature of things that one's ignorance about facts is something regarding what one can have only generic and not specific knowledge. I can know about my ignorance only abstractly at the level of generic indefiniteness (*sub ratione generalitatis*), but I cannot know it in concrete detail. I can meaningfully hold that two and two's being four is a *claim* (or a *purported* fact) that I do not know to be the case, but cannot meaningfully maintain that two and two's being four is an *actual* fact that I do not know to be the case. To maintain a fact as fact is to assert knowledge of it: in maintaining *p* as a fact one claims to know

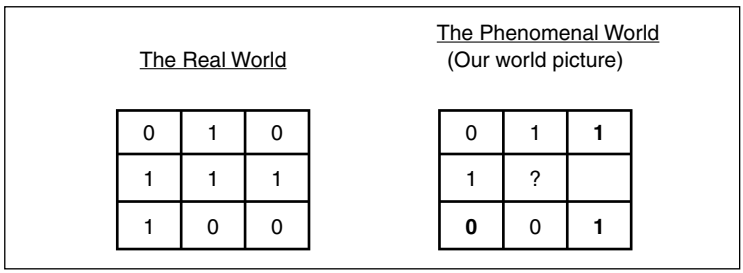



**Figure 2** An illustrative contrast

that *p*. Now while one can know *that* that one does not know various truths, one is never in a position to *identify* any of the specific truths that one do not know. I can have only general but not specific knowledge about my ignorance, (although my knowledge about *your* ignorance is unproblematic in this regard).[1]

In this connection it is instructive to note some relatively simple but nevertheless far-reaching considerations regarding the project of rational inquiry and the limits of knowledge. Let *Kxp* as usual abbreviate "*x* knows that *p*." And now note the contrast between the contentions:

"*x* knows *that something* has the property *F*": $Kx(\exists y)Fy$

and

"*x* knows of *something that it* has the property *F*": $(\exists y)KxFy$

The variant placement of the quantifier means that there is a crucial difference here, since in the second case, unlike the first, the knower in question is in a position specifically to identify the item at issue. Here in this second case our knower not merely knows generally and indefinitely that *something* has *F*, but knows concretely and specifically *what it is* that has *F*. The two cognitive situations are clearly very different. To know that someone is currently in the Library of Congress is one thing, and to know who is there is quite another, for while I know full well that *someone* is there, nevertheless there may well be no-one of whom I know that *he or she* is there.

And this has wider ramifications. For the reality of it is that there is a world of difference between saying "I don't know whether *p* is a fact" and saying "*p* is a fact that I don't know." The former comes down to maintaining: I neither know that *p* nor that not-*p*. No problem there. However, the second statement, to the effect that *p* is a fact that one doesn't know to be so, comes down to maintaining both that *p* is true and that I do not know this. Such a claim is clearly self-contradictory.[2]

## 2. Lessons of the Preface Paradox

Our cognitive situation is also deficient as regards matters of error where our beliefs are outright *discrepant* from the facts. For we ourselves can never pinpoint our (current) errors. Here again, it makes no sense at all to say "I erroneously believe $p$ to be the case." This lesson is inherent in the well-known Preface Paradox inherent in the situation where the conscientious author of a fact-laden book apologizes in the Preface for the error the book contains. "Several friends have read the MS and helped me to eliminate various errors. But the responsibility for the errors that yet remain is entirely mine." But why not simply correct these mistakes? Alas, one cannot. (If only one knew what they were one would of course correct them.) They are lost in a fog of unknowing.

And so, operating with the distinction between real and putative knowledge—though unavoidable—is a tricky business. We certainly can apply this distinction retrospectively. ("Yesterday I took myself to know that $p$ but I was quite wrong about it.") But we cannot apply it to what is presently before us. ("I know that $p$ but I really don't" is in deep semantical trouble on grounds of simple inconsistency.) There is, clearly, something very frustrating about this situation.

The self-critical aspect of our metaknowledge—the circumstance that it involves indefinitely general claims about the imperfections of our knowledge—endows it with a paradoxical aspect. We know full well that our claims to knowledge about reality are often wrong. We realize full well that much of our "knowledge" is not more than *purported* knowledge—that our knowledge is defeasible—that our claims to knowledge about reality must often be retracted in the course of cognitive progress. But while all of this is true, and our knowledge claims oft gang agley and may well prove to be wrong, nevertheless we cannot say which ones. Although we are—or should be—cognitive fallibilists the fact remains that we are error blind. While we can say with confidence that some—perhaps many—of our knowledge

claims are wrong, we can never say in advance with respect to which ones this possibly will be realized. We are—or should be—reasonably confident *that* our knowledge contains error, but we can never say with comparable reasonable confidence pinpoint just where it is that this prospect will be realized.

The Preface Paradox situation is thus indicative of a larger predicament. We know or must presume that (at the synoptic level) our present-day science contains various errors of omission and commission—though we certainly cannot say where and how they arise. And it does not matter how the calendar reads. This state of affairs holds just as much for the science of the future as for that of our own day. Natural science is not only imperfect but imperfectable. And this fact has profound implications for the nature of our "scientific knowledge." Our knowledge as an aggregate of accepted factual claims is one thing. But our meta-cognitive recognition—indeed knowledge—of the presence of error in the whole collection is another of no lesser significance. Both are facts. And our knowledge here is to all intents and purposes consistent with our meta-knowledge. The paradox is that our metaknowledge will *conflict* with our knowledge, seeing that one of the things we cannot avoid adding to our knowledge is the item of metaknowledge that some of our knowledge claims are mistaken.

The Preface Paradox analogy accordingly indicates that we cannot use present knowledge to *correct* itself—even where we recognize and acknowledge that it requires correction. And our deliberations here indicate that we cannot use present knowledge to *complete* itself even though we know it requires completion. Either way, we have the predicament of remaining powerless in the face of acknowledged shortcomings.

The point of such considerations emerges in the context of the following challenge:

> You are clever enough to realize that what you purport as knowledge contains errors of various sorts. So why not just refrain from such purportings and tell us the truth instead?

This plausible challenge is in fact absurd. We have no viable option here. We have no access way to the truth save via what we *think* to be true—there simply is no such thing. "Tell us what *is* true independently of what you *think* to be so" is an abound challenge. Despite our recognition that it contains errors—that all too often what we think to be true just is not—we have no alternative but to accept our best estimate of the truth as a viable surrogate for the real thing. In matters of truth-estimation as elsewhere, we have no alternative but to do the best we can, and so we must be prepared to come to terms with the fact of life that our knowledge is something of a Swiss cheese replete with holes of unrecognized error.

And this of course has important implications for how we live our lives. We live in the domain of reality but act in the domain of what-we-think-to-be-so. Our decisions are made in the realm of appearance even thought our thought-guided praxis unfolds in the realm of reality. And the prospect—nay the virtual inevitability of a discrepancy between the two is an ineliminable feature of the human condition.

## 3. Oversimplification as a Gateway to Error

Oversimplification is a salient form of misinformation about reality. For it always involves errors of omission, occurring whenever someone leaves out of account features of an item that bear upon a correct understanding of its nature. For example, to say that Rome declined because its elite was enervated by lead poisoning from the pipes of its water supply oversimplifies the issue by fixing on one single causal factor to the exclusion of many others.

Oversimplification occurs when simplification is carried to an extent that is counterproductive in relation to the aims of the enterprise at hand. It consists in a failure to provide not *all* detail whatsoever (which is unavoidable), but ever only all issue-pertinent detail. And in this regard it seems plausible and useful

to grade relevancy on a scale from 0 to 10 somewhat in line with the following array of adjectives:

- crucially (10)
- importantly/majorily (8)
- significantly/substantially (6)
- minimally/marginally (4)
- irrelevantly/immaterially (2)
- wholly beside the point (0)

The seriousness of oversimplification ranges in line with these distinctions from the grave to the trivial.

Oversimplification becomes a serious cognitive impediment by failing to take note of factors that are germane to the matters at hand, thereby doing damage to our grasp of the reality of things. Whenever we unwittingly oversimplify matters we have a blindspot where some facet of reality is concealed from our view.

Oversimplification thus consists in the omission of detail in a way that is misleading in creating or inviting a wrong impression in some *significant*—i.e., issue-relevant—regard. In practice the line between beneficial simplification and harmful oversimplification is not easy to draw. Often as not it can only be discerned with the wisdom of retrospective hindsight. For whether that loss of detail has negative consequences and repercussions is generally not clear until after a good many returns are in.

For the most part, oversimplification involves loss. The student who never progresses from Lamb's *Tales from Shakespeare* to the works of the bard of Avon himself pays a price not just in detail of information but in the comprehension of significance. And the student who substitutes the Cliff's Notes version for the work itself suffers a comparable impoverishment. To oversimplify a work of literature is to miss much of its very point. Whenever we oversimplify matters by neglecting potentially relevant detail we succumb to the flaw of *superficiality*. Our understanding of matters then lack depth and thereby compromises its cogency. But this is not the worst of it.

One of the salient aspects of oversimplification lies in the fundamental epistemological fact that errors of omission often carry errors of commission in their wake: that ignorance plunges us into actual mistakes.

Where Reality is concerned, incompleteness in information invites incorrectness. If you do not know the missing letter in diagram *A* you are likely to think that it too as an *X* and so take the situation to be as per *B* instead of *C* (See Figure 3). Your ignorance then engenders the misleading impression that the rows are all alike instead of realizing the differences at issue.

Oversimplification is, at bottom, nothing but a neglect (or ignorance) of detail. Its beginnings and origination lies in a lack of detail—in errors of omission. But that is not by any means the end of the matter. For such errors of omission all too readily carry errors of commission in their wake. If when confronted with

C C — C C

we conclude that the missing letter is a C instead of the A that may well actually be there. When we fill in gaps and omissions—as we all too generally do—we are likely to slide along the slippery slope of allowing simplification lead us into error.

Suppose, for example, that the reality of it is as per

(*R*)

| | |
|---|---|
| *a a A a* | *A A* |

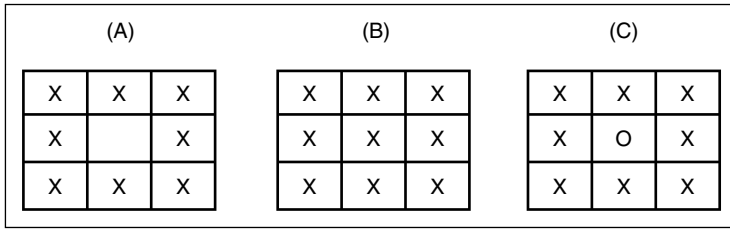
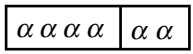



**Figure 3** Incompleteness can invite incorrectness

And let it be that we "oversimplify" matters by failing to differentiate between *a* and *A*, viewing both alike simply as instances of one common $\alpha$. We then arrive at the following *model* of reality:

(*M*) 

And now on this basis we are led straightaway to conclude that "Both compartments are exactly the same in composition"—a clearly erroneous belief.

Whenever there is a blank in our knowledge, the natural and indeed the sensible thing to do is to fill it in the most direct standard, plausible way. We assume that the person we bump into in the street speaks English and say "oops, sorry"—even though this may well prove to be altogether unavailing. We regard the waiter in the restaurant as ours even where it is the brother who bears a family resemblance. We follow the most straightforward and familiar routes up to the point where a DETOUR sign appears. We willingly and deliberately adopt the policy of allowing oversimplification to lead us into error time and again because we realize it does so less frequently than the available alternatives.

Oversimplification plays a critical role throughout all contexts of information processing—be it in inquiry (information development) or inference (information exploitation) or communication (information transmission). The entire range of information management sees oversimplification entering upon the scene—often with decidedly unhappy results.

## 4. Why Oversimplification? Scientific Progress and Cognitive Complexity

Why do we ever oversimplify? Why not just go ahead and take those suppressed complications into account? The answer is that in the circumstances we simply do not know how to. The

situation is akin to that of the Paradox of the Preface. Recall that there our author writes: "I want to thank X, Y, and Z for their help with the material in the book. I apologize to the reader for the remaining errors, which are entirely mine." One is, of course, tempted to object: "Why apologize for those errors? Why not simply correct them?" But of course he cannot do so because he does not know where those errors are located. And the situation with oversimplification is much the same. All too often we realize *that* we oversimplify, what we do not know is *where* we oversimplify. This is, in general, something that we can discern only within the wisdom of hindsight.

Unfortunately, moreover, oversimplification is inherent in the very nature of cognitive rationality as it functions in scientific inquiry. Empirical science is a matter of drawing universal conclusions ("theories" they are usually called) from the perceived facts of observation and experiment. But observation and experimentation is ongoingly enhanced by technological advance in the devices used to monitor and manipulate nature. The progress of science proceeds in the wake of an evermore sophisticated technology for the acquisition and processing of data which increasingly sophisticates the distinctions which have to be drawn and increasingly refines the theories employed in providing explanations.[3] And a web of theory woven about a given manifold of data will not—and effectively cannot—be adequate to the situation that will obtain later on, after our body of information has been enhanced.

Throughout rational inquiry—and accordingly throughout natural science—we naturally adopt the methodological principle of rational economy to "Try the simplest solutions first" and then to make this result do as long as it can. For rationality enjoins us to operate on the basis of Occam's Razor—considerations are never to be introduced where they are not required: complexity is never to be posted beyond necessity. Our theories must be minimalistic: they must fit the existing data tightly. And this means that as our data are amplified through new observations and experiments the previously prevailing theories will almost

invariably become destabilized. Those old theories oversimplified matters: new conditions call for new measures, new data for more complex theories. It lies in the rational economy of sensible procedure that the history of science is an ongoing litany of oversimple old theories giving way to more sophisticated new ones that correct their oversimplification of the old.

Induction with respect to the history of science—a constant veritable litany of errors of oversimplification—soon undermines our confidence that nature operates in the way we would deem all that simple. For that history is an endlessly repetitive story of simple theories giving way to more complicated and sophisticated ones. The Greeks had 4 elements; in the nineteenth century Mendeleev had some 60; by the 1900s this had gone to 80, and nowadays we have a vast series of elemental stability states. Aristotle's cosmos had only spheres; Ptolemy's added epicycles; ours has a virtually endless proliferation of complex orbits that only supercomputers can approximate. Greek science was contained on a single shelf of books; that of the Newtonian age required a roomful; ours requires vast storage structures filled not only with books and journals but with photographs, tapes, floppy disks, and so on. Of the quantities currently recognized as the fundamental constants of physics, only one was contemplated in Newton's physics: the universal gravitational constant. A second was added in the nineteenth century, Avogadro's constant. The remaining six are all creatures of twentieth-century physics: the speed of light (the velocity of electromagnetic radiation in free space), the elementary charge, the rest mass of the electron, the rest mass of the proton, Planck's constant, and Boltzmann's constant.[4]

It would be naive—and quite wrong—to think that the course of scientific progress is one of increasing simplicity. The very reverse is the case: scientific progress is a matter of complexification because oversimple theories invariably prove untenable in a complex world. The natural dialectic of scientific inquiry ongoingly impels us into ever deeper levels of sophistication.[5]

In this regard our commitment to simplicity and systematicity, though methodologically necessary, is ontologically unavailing. Our increasingly sophisticated investigations invariably engender changes of mind moving in the direction of an evermore complex picture of the world. Our methodological commitment to simplicity should not and does not stand in the way of an ongoing discovery of complexity.

Consider just one example. In the 11th (1911) edition of the *Encyclopedia Britannica*, physics is described as a discipline composed of 9 constituent branches (e.g., "Acoustics" or "Electricity and Magnetism") which were themselves partitioned into 20 further specialties (e.g., "Thermo-electricity": of "Celestial Mechanics"). The 15th (1974) version of the *Britannica* divides physics into 12 branches whose subfields are—seemingly—too numerous for listing. (However the 14th (1960) edition carried a special article entitled "Physics, Articles on" which surveyed more than 130 special topics in the field.) When the National Science Foundation launched its inventory of physical specialties with the National Register of Scientific and Technical Personnel in 1954, it divided physics into 12 areas with 90 specialties. By 1970 these figures had increased to 16 and 210, respectively. And the process continues unabated to the point where people are increasingly reluctant to embark on this classificatory project at all.

At this point we encounter a conflict of ideas that is best described eponymously. For on the one hand there stands J. M. Keynes' Principle of Limited Variety which has it that nature is finitely complex and that reality can be comprehensively characterized in a finite number of natural descriptive kinds. And on the other hand there stands G. W. Leibniz's Principle of Infinite Detail which envisions an infinitely complex nature whose endless variation of detail is such that every ultimate unit of existence is effectively a species unto itself. And this would mean that any and every human effort at characterizing reality and its modus operandi is destined to be an oversimplification.

## 5. Cognitive Myopia: Confusion and Conflation and Their Consequences

Confusion and conflation are the two prime modes of oversimplification. The key ideas at issue here are to be understood as follows:

1. *X confuses* items *x* and *y* over the question-manifold *Q* iff in answering the questions within this manifold *X* fails to distinguish between *x* and *y*.
2. *X conflates* items *x* and *y* over the question-manifold *Q* iff in answering the question within the manifold *X* sees both *x* and *y* as one selfsame *z*.

And now as noted above this cognitive myopia takes two forms:

- *Mild version*: this involves an *occasional confusion* between two distinct sorts of items (As for example when there is an occasional mix-up in construing *h* as *k*, or conversely).
- *Strong version*: this involves a *systemic conflation* (As for example when both *h* and *k* appear simply as a fuzzy and indistinguishable blurred complex).

For the sake of illustration consider someone whose visual myopia is such that he has is incompetent with regard to telling 5 and 6 apart. As a result of such an inability to distinguish 5 from 6 the individual may well through *conflation*

envision 56 as ✱✱.

Or again, the individual may through *confusion*

envision 56 as 66.

Such modes forms of cognitive myopia have very different ramifications for our grasp of the world's lawful comportment.

Suppose that we are in reality dealing with the perfectly regular series

*S*: 6 5 6 5 6 5 6 5 6 5 . . .

but due to the occasional confusion of a mild cognitive myopia we may then actually "see" this (be it by way of observation or conceptualization) as

*S′*: 6 5 5 5 6 5 5 5 6 5 . . .

Observe that our inability to distinguish has here effectively transmuted a lawful regularity into a random disorder. The appearances then indicate (via "Mill's Methods of Agreement and Difference") that there is no causal correlation between *S* and *S′*. The supposition of (mild) myopia thus induces a drastic disconnection between the two levels of consideration at issue, with the lawful order of *S* giving way to lawlessness in regard to its model *S′*.

Thus even so crude an example suffices to show that lawful order can unravel and be destroyed by the confusion engendered by an occasional inability to discern differences. And this relatively rudimentary observation has far-reaching implications. In specific, it means that even if the world is possessed of a highly lawful order, this feature of reality may well fail to be captured in even a mildly myopic representation of it. And this in turn means that, given myopia, the world-view presented in our world-modeling may well be no more than loosely coupled to the underlying reality of things thanks to the oversimplification that is almost inevitably involved.

On the other hand, there is also the prospect of a severe cognitive myopia that results in a *systemic conflation* of reality in the setting of its conceptualization.

For the sake of illustration let it thus be that the reality that confronts us has the random structure:

6 5 5 6 6 6 5 5 5 6 5 5 6 6 5 . . .

But let it also be that in representing this reality in our observations and/or conceptualization our view of the matter is so myopic that we cannot readily distinguish between 5 and 6: both simply look like a blurred (5-or-6) to us. Our random series is now representatively transmuted into the elegant uniformity of the series

(5-or-6) (5-or-6) (5-or-6) (5-or-6) . . .

Where reality is in fact random and discordant, its representation in our cognitive field of vision is the quintessence of lawful elegance.

For under the conditions at issue we will have it that a world whose physical comportment is in certain respect random and lawless may well be seen by its cognitively myopic observers as having a phenomenology that is deterministically lawful of a series whose random basis is laden beneath a cloud cover of indistinguishability.

As these considerations indicate, oversimplification can easily distort our view of the lawful structure of the world. It can either lead to a nomic deficit that reflects the loss of various actual laws or to a nomic surfeit the gives the illusion of loss when there are none.

By its very nature as a process of cognitive omission, oversimplification conceals certain actual regularities from our view. And moreover, insofar as it makes matters appear more uniform than they actually are, it is virtually bound to lead to spurious regularities.

The point is that there are not the optical illusions of the bodily visions but also comparable cognitive illusions where we exercise our mental vision to grasp the ways of the world. Our oversimplified models of reality distort our view of its modes of operation in ways that can not only block various lawful regularities from our view but can also indicate spurious regularities.

In all, then, we have little alternative to deeming our knowledge—science-as-we-have-it specifically included—to provide us

with an oversimplified model of reality. To view matters in a different light would be to shut the gate to scientific progress, a step that does not have much to be said on its behalf.

While the oversimplification at issue with conflation and confusion differ significantly, they both conspire to raise the prospect of a significant decoupling between reality ($R$) and our cognitive modeling ($M$) of it—between the lawful order of nature ($N$) and its representation in the law-manifold encapsulated in the science of the day ($S$). We would, ideally, love to have it that reality and our view of it are duly aligned, so that $M = R$ and $S = N$. But in view of the effectively inevitable presence of cognitive myopia we neither claim nor expect this. Once we pay attention not to *what* our science maintains but to how it comes about that it does so, we cannot avoid the realization that the distinction between Reality and Appearance is indispensable.

And so while there need be no *ontological* duality as between Reality and Appearance, there is going to be an epistemic disparity here. Thanks to the complexity and detail of the Reality of things, our putative knowledge of it as encompassed in Appearance is going to fall short in ways that relate not only to incorrectness and incompleteness but also—and especially—to oversimplification and thereby to error.

And once we acknowledge the variety of defects that even our best-formed picture of reality is bound to exhibit, we are well enroute to a realistic understanding of the nature of the real as something that transcends the grasps of mind. Most everything we claim about this world hinges on the issue of our cognitive competence. But—interestingly enough—not *realism*. There is no stronger argument for a metaphysics of mind-independent reality than the concession that our mental operations are not up to the job of getting a fully adequate grip on the nature of the real.[6]

Chapter 5

# Scientific Realism

## Synopsis

(1) A distinctive, ontologically geared sense of "Reality" is at issue when realism is seen as addressing the *causal basis* of the appearances. This mode of realism is oriented specifically to the mechanisms of scientific explanation for the phenomena as we apprehend them. (2) There is a crucial analogy between medieval ontological realism and modern scientific realism. (3) However, to contemplate "reality" on this basis faces the problem that the science of one era can and often does view matters differently from that of another. (4) Scientific realism must accordingly look eschatologically to ideal rather than to the real science we actually have in hand. It is a thing of aspiration rather than actual accomplishment, and is an eschatological foray quite different from metaphysical realism of the traditional sort.

## 1. A Different Sort of "Reality"

The epistemic realism that has preoccupied us to this point contrasts markedly with the ontological realism that also figures prominently on philosophy's agenda. What is at issue in this ontological case is a realism that is geared not to fact but to explanation; its defining question is not "What is really the case in contrast with what merely seems to be?" but rather "How is it

that what appears to be the case is as it is: what is it that makes it to be so?" The crux here is ontological and causal: reality is here seen as *the causal ground of appearance*—providing the explanatory basis for how it is that the appearances stand as they are. This causal approach takes reality to be the state of things as science depicts it, and on this basis provides an explanatory account for the way in which things appear to us. Here the appearance/reality distinction comes down to the contrast between the way things are taken to be in the setting of ordinary experience as contrasted with the scientific account of things.

The eminent British astrophysicist Arthur Eddington remarked that when we deal with something even so seemingly simple as a table, two very different tables are at issue: on the one hand the physicists' table of atoms and molecules, and on the other the everyday-life table of wood and glue. For we can, of course, look at the world's furnishings in general either from the angle of science or from that of everyday life. But which is the *real* table? And which is the *correct* account of how things stand in the world? How are we to assess the comparative claims of the two perspectives: that of science and that of everyday life.

Basically there are three alternatives here:

1. *Radical Scientism.* Science alone affords us the true account of reality. The everyday view of things is a web of mere appearance that is no more than a (very) convenient fiction that enables creatures like ourselves to meet their practical needs.
2. *Radical Common-Sensism.* It is the world of everyday life experience that is (alone) real and true—at any rate for us. Our science is no more than a *web of theories* spun by imaginative people to explain how the life world works—to account for how and why it is that the experiential realm is as is. Accordingly, science is a matter of themselves conjecture to explain experiential reality and the physicists talk is no more than an elaborate theoretical factor devised for explanatory purposes.

3. *Pragmatic Perspectivalism.* Even as the same landscape can be characterized *with equal justice* from various points of view (that of the agronomist, the geologist, the military artillerist, the landscape painter, etc.), so the world at large can be viewed from different perspectives including that of science and that of everyday life. Different purposes and different issues are involved with these prospectival variations. In specific, science addresses our explanatory questions while the everyday-life concepts of things addresses (many of the issue of) the management of our everyday life affairs. Of course there is a relationship here, but not one that authorizes a systemic subordination of some sort believe these two versions of reality, each of which is perfectly correct and appropriate within the realm of its characteristic issues. It all depends on the sort of question being asked whether the scientistic or common-sense approach is in order. Each is OK within its own particular context of concern: neither enjoys absolute exclusivity.

Brand Blanshard tells the story of how his Oxford tutor H. H. Joachim once asked him while on an afternoon walk, "Do you suppose that there really *are* such things as atoms?" Prior to World War I, this may have seemed a genuinely problematic issue. But in due course, after Hiroshima especially, it ceased to seem plausible to question the existence of atomic particles. To all appearances, the progress of science and technology has transformed the situation regarding such "theoretical entities" as atoms and electrons. We accept them not because we experience them but because we need them to explain and—above all—to manipulate the things we experience.

And just this is the pivotal idea of the doctrine of scientific realism, whose exponents hold that natural science affords accurate and reliable information about reality. If we want to know about the kinds of things there are in the world and the sorts of properties they have, it is to science that we should turn.

Such a position moves well beyond the generalized metaphysical realism that goes no further than maintaining *that* there is a mind-independent reality of some sort or other. For scientific realism moves on to say (i) that we can come to know a great deal about it; (ii) that this knowledge relates not just to peripheral matters but to essentials; and (iii) that this information is provided through the inquiry processes of science. Science on this view gives an appropriate account of the salient and characteristic features of what objectively exists in the real (mind-independent) world. In particular, the theories of natural science regarding non-observable entities—sub-atomic particles, electromagnetic fields, gravitational space-warps, and the rest—characterize the actual properties of real things in the real world, things every bit as real as the animals and plants and rocks that we see "with our own eyes."

Along these lines, much of the thought of recent epistemologists takes its starting point in Eddington's two-tables discussion with its contrast between the solid table of everyday experience and the physicists' table of a manifold of electromagnetic oscillations in mainly empty space. He then goes on to maintain that the latter is the real table as it exists in nature, and that the former, everyday table is merely an appearance, a delusion—a mirage, as it were—existing in people's minds. On this approach reality is something altogether distinct from and fundamentally different in nature from our untutored everyday-life view of things. Our ordinary-life view of the world is a matter of mental (rather than optical) illusion.

But plausible thought this may sound, it represents a strange and counterproductive proceeding. For one thing. For while Descartes rightly insisted that the cause can be no less real than the effect, how could the effect be less real than the cause which (by hypothesis) produces it? And what is it that gives those material causes claims to *existential* priority on their mental efforts? Why should the ink on the page be deemed real and the sentence it conveys "merely phenomenal"? (In the end, it may, after all, have been the work of thought that led to the production of

those ink-marks.) The whole idea of aligning reality with causal priority is strange and ultimately untenable.

Scientific realism of the standard sort confuses two very distinct versions of the appearance/reality distinction. It correlates the *real/merely-apparent* distinction of classification with the *scientific/ordinary-life* distinction of conceptualization. But taking this tendentious view of things would be to convert science into scientism. The fact of it is that science and common life afford different perspectives upon one single sphere of existence—the real world. They neither deal with different realms of being, nor yet is one of them reality-oriented and the other mere illusion. In ordinary life and science we emphatically do not address different realities or different modes of being. After all, the very reason for being of science is to illuminate and explain the ways of our experiential world.

There is no insuperable problem and no decisive obstacle to seeing the things at issue in the world-picture of science—such "theoretical entities" as quarks and cosmos—as being real. The difficulty—and the error—would be to expand this position via an exclusivity clause that claims them as *the only* real objects and dismisses the everyday world of tables and trees and cats—as "merely apparent."

## 2. The Trouble with Scientific Realism

Scientific realism is the doctrine that science describes the real world: that the world actually is as science takes it to be and that its furnishings are as science envisions them to be.[1] Accordingly, scientific realism maintains that such theoretical entities as quarks and electrons are perfectly real components of nature's "real world." They are every bit as real as acorns and grains of sand. The latter we observe with the naked eye, the former we detect by complex theoretical triangulation. But a scientific realism of theoretical entities maintains that this difference is incidental. In principle, these "unobservable" entities exist in just the way in which the scientific theories that project them

maintain. On such a realistic construction of scientific theorizing, the declarations of science are factually true generalizations about the actual behavior of real physical objects existing in nature.

The analogy between the medieval realism of universals and a latter-day realism of the theoretical entities of material science is instructive. Both forms of realism rest on the common basis of the principle:

> (P) Whatever is needed to provide an adequate account for the existence or the nature of something real is itself real and, as such, actually exists.

It is by this common principle that we moderns validate the claim that electrons exist, and that the medievals validated the claim that universals exist. The difference between the two doctrines lies in the varying construction placed on the pivotal idea of "accounting for." The medievals took this to mean: "needed to 'account for' in the order of understanding—of interpretative (or 'hermeneutic') explanation." The moderns, by contrast, construe it to mean "needed to 'account for' in the order of causality—of causal explanation." The medievals thus stood committed to a *rationally intelligible* world order, while the moderns stand committed to one that is *causally explicable*. But, all the same, the two modes of realism are united by a common recourse to principle (P) to provide the linking premiss needed for the transition from patent to covert reality—from the palpably real to an order of suprasensible reality that is not evident at the crude level of ordinary sensory experience. Insofar as the one doctrine is plausible, the other is no less so.

This perspective highlights the inherent difficulty of scientific realism: its reliance on the principle (P). To apply this principle for establishing the existence of non-observable entities one needs a premiss of the form:

> — Non-observable entities of the type X are indeed needed to account for certain obviously real objects in causal terms.

However, this premiss is bound to be problematic because we cannot glimpse future science to see what the materials of a definitive account really are. The best we can ever do is to secure that non-observable entities of the type X are necessary *in the present state of science* to account for certain obviously real objects in causal terms. The italicized qualification is a concession to the realities of our epistemic situation which cannot be eliminated. And this fact blocks our ever-using principle (F) straightforwardly and without pre-establishing the reality of theoretical entities. This consideration renders scientific realism problematic, seeing that it presumes the essential correctness of natural science as we have it.

But is this a tenable position? Clearly it has difficulties. For the theoretical entities envisioned by current science will only exist as current science envisions correct—only if it manages to get things right. And this view that current science has got it altogether right evidently has its problems. For science constantly changes its mind, not just with regard to incidentals but even on very fundamental issues. The history of science is the story of the replacement of one defective theory by another. So how can one plausibly maintain a scientific realism geared to the idea that "science correctly describes reality"?

The characteristic genius of scientific realism is inherent in its equating the theory-creatures envisioned in *current* natural science with the domain of what actually exists. (After all the science of the day is our only promisingly available option here.) But this equation would work only if science, as it stands, has actually "got it right." And this is something we are certainly not able—and not entitled—to claim.

All too clearly there is insufficient warrant for and little plausibility to the claim that the world is as our present-day science claims it to be—that our science is correct science and offers the definitive "last word" on the issues regarding its creatures-of-theory. We can learn by empirical inquiry about empirical inquiry itself. And one of the key things to be learnt is that at no actual stage does natural science yield a firm, final, unchanging result.

After all, the current state of "scientific knowledge" is simply one state among others that share the same imperfect footing of ultimate correctness or truth. The "science of the day" must be presumed inaccurate no matter what the calendar says. We unequivocally realize there is a strong prospect that we shall ultimately recognize many or most of our current scientific theories to be false and that what we proudly flaunt as "scientific knowledge" is a tissue of hypotheses—of tentatively adopted contentions many or most of which will ultimately come to be regarded in the wake of further progress as quite untenable and in need of serious revision, or perhaps even abandonment. And this fact impedes a scientific realism of any straightforward sort. Not only are we not in a position to claim that our knowledge of reality is *complete* (that we have gotten at the whole truth of things), but we are not even in a position to claim that our putative "knowledge" of reality is *correct* (that we have gotten at the real truth of things). Such a position calls for the humbling view that just as we think our predecessors of a 100 years ago had a fundamentally inadequate grasp on the "furniture of the world," so our successors of a 100 years hence will take the same view of our purported knowledge of things.

With science is seen in historical perspective, it becomes clear that there is no adequate justification for thinking that natural science as we now have it is definitively correct. For experience teaches that scientific theories have a finite lifespan. They come to be modified or replaced under various innovative pressures, in particular the enhancement of observational and experimental evidence (through improved techniques of experimentation, more powerful means of observation and detection, superior procedures for data-processing, etc.).

The ultimate untenability of theory at the frontier of present-day science—irrespective of the data—is one of the very few points of consensus of modern philosophy. When Karl Popper writes "From a rational point of view, we should not 'rely' on any (scientific) theory, for no theory has been shown to be true, or can be shown to be true . . .,"[2] he speaks for the entire tradition

of modern science scholarship from Charles Sanders Peirce to Nancy Cartwright. We must unhesitatingly presume that, as we manage to push our inquiries through to ever deeper levels of comprehensiveness and detail, we will obtain a very different view of the constituents of nature and their laws. Its changeability is a fact about science that is as inductively well-established as any theory of science itself.

Like the world itself, our scientific understanding of its *modus operandi* is not a static system but a dynamic process. It is only to be expected that the frontier themselves of the present day are subject to improvement and revision. If there is one thing we can learn from the history of science, it is that the scientific theorizing of one day is looked upon by the next as deficient. At every stage of its development, its practitioners, looking backwards with the wisdom of hindsight, will unquestionably view the work of their predecessors as seriously deficient and their theories as fundamentally inadequate in critical regards. There is no reason to see the posture of our successors as fundamentally different from our own in this respect. We know that science can be improved. But we also acknowledge that it cannot be perfected. Considerations of general principle, as well as the lessons of the history of science prevent our taking the stance that the world is as science depicts it to be—be it present-day science or the science of A.D. 3000. And this realization constitutes a decisive impediment to an eschatological realism looks to future science for the finality that present science is unable to supply.

In the end, one cannot but acknowledge that any "state-of-the-art" of natural science is a human artifact and like all other human creations has a finite lifespan. As something that comes into being within time, the passage of time will also bear it away. Clearly our present science simply is not in a position to deliver a definitive picture of physical reality. And there is no reason to think that, in the future, scientific theorizing must in principle reach a final and permanent result. Scientific work at the creative

frontier of theoretical innovation is always done against the background of the realization that anybody's "findings"—one's own included!—will eventually be abandoned and become superseded by something rather different. Only the aims of natural science are stable, not its substantive questions—let alone its answers to them!

## 3. A Utopian Demand

We do not or at any rate, given the realities of the case, should not—want to adopt categorically the ontological implications of scientific theorizing in just exactly the state-of-the-art configuration presently in hand. A clear distinction must accordingly be maintained between "our conception of reality" and "reality as it really is" between appearance and reality itself. We realize that there is little justification for holding that present-day natural science describes reality and depicts the world as it really is. And this constitutes a decisive impediment to straightforward realism. It must inevitably constrain and condition our attitude towards the natural mechanisms envisioned in contemporary science. We certainly do not—or should not—want to reify (hypostatize) the "theoretical entities" of current science, to say flatly and without qualification that the contrivances of our present-day science correctly depict the "furniture of the real world." A realistic awareness of scientific fallibilism precludes the claim that the furnishings of the real world are exactly as our science states them to be—that electrons actually are just what the latest Handbook of Physics claims them to be.

In the domain of natural science as we do—or ever shall—actually have it, access to anything identifiably final and definitive is denied us. Thus the definitively correct science is no more (though also no less) than an idealization. It represents an ideal which, like other ideals, is worthy of pursuit, despite the fact that we must recognize that its full attainment lies beyond our grasp.

Accordingly, we have to come to terms with the realism-impeding fact that our scientific knowledge of the world fails in crucial respects to give an accurate picture of it. Certainly, we subscribe for the most part to the working hypothesis that in the domain of factual inquiry our truth may be taken to be the truth. All the same, we realize that our science is not definitive, that reality is not actually as we currently picture it to be, that our truth is not the real truth, that we are probably quite wrong in supposing that the furnishings of "our science" actually exist exactly as it conceives them to be. No doubt "reality itself," whatever that may be, is real enough, but our "empirical reality"—reality as our science conceives it—is a fiction. Our scientific description of reality is a mind-devised, man-made artifact that cannot actually be accepted at face value.

A scientific realism geared to the idea of the definitiveness of science-as-we-have-it (now or ever) represents an overly optimistic idealization; it is not a position that is realistically tenable in any straightforward or unqualified way. Scientific realism is at best an idealization—a thing of hope rather than accomplishment.[3] And this eschatological mode of scientific realism is something quite different from the metaphysical realism of the traditional sort, directed not to the nature of ultimate reality but to the existence of less hyperbolic reals.

Chapter 6

# The Rationale of Realism

## Synopsis

(1) Realism inheres in the very idea of cognition—even, and indeed particularly, through acknowledging its defects. For even a fallibilistic doctrine of pervasive error must commit itself to realism, since for being wrong there must be something to be wrong about. (2) Moreover, a realistic stance is indispensable to communication. (3) However, *agreement* about reality's *nature* is not a requisite here: its mere *being* is what matters. (4) The rationale of realism is presuppositional. For the existence of a cognition-transcending and thought-independent reality is not something that we derive from experience; it is, rather, something we do and must accept from the outset for experience to be cognitively significant. Experience does not show us *that* there is a reality, but rather, with this idea already in place, it purportedly informs us about *what* this reality is like. (5) The stance of realism is validated through in the important objectives that it accomplishes for us. (6) Accordingly, the rationale of a commitment to realism is ultimately pragmatic, seeing that it affords the *sine qua non* requisites for meeting some of our most critical needs—cognitive and practical alike. (7) Such a validation of realism is ultimately a matter of acute hindsight. (8) Yet the argumentation at issue is not a vicious circle but a benign cycle. (9) The teleological/pragmatic cast of such a validation of realism has an aura of idealism about it, seeing that its commitment to realism addresses itself not to reality as such, but to

the *conception* of a mind-independent reality and its critical role throughout our thought and action.

## 1. Realism and Cognition

As the preceding chapter has argued, scientific realism encounters substantial problems. However metaphysical realism is something else again. A metaphysical realism of mind-transcendent reals roots in the commonplace that cognition can be both correct or incorrect. To say that *X* knows something is to commit oneself to the idea that that is how matters actually stand, and to say that *X* errs is to commit oneself to the that the reality of things differs from what *X* thinks. Even to say that *X* is ignorant of something is to commit oneself to the idea that the actuality of the matter is unknown to *X*. Knowledge is knowledge of reality; error is error regarding reality; ignorance is ignorance about reality. A cognitive condition of any sort involves an implicit commitment to a reality whose nature is indifferent to what people think about it. To see man as homo sapiens, a knowledge-capable being, is to stand committed to realism.

One salient pathway to the distinction between appearance and reality accordingly runs via the defects of *error* and *ignorance*. For what is pivotally at issue here is the prospect of a difference and discrepancy between what actually is so and what is (merely) thought to be. Thus even a fallibilistic ideology of error is bound to realism; the very idea of error demands subscription to some sort of realism, since for error to be possible there must be something distinctively objective and real to be wrong about. The very idea of error commits us to a reality that differs from what it is thought to be and thereby requires a robust conception of reality.

Viewed in such a cognitive perspective, realism is a metaphysical position defined by the following contention:

> Being a fact does not depend on what people know/think/believe to be so; facts obtain objectively, independently of any and all such epistemic considerations.

Such a contention immediately opens the door to what might be characterized as an error-based approach to realism. Its basic idea goes back to Plato's dialogue *Theaetetus*, where Socrates critiques the following idea:

> False judgment [i.e., error] is the sort of misjudgment that occurs when a person confuses two things, both of which are distinct, through asserting that the one is the other by misidentifying something that really is with something else [that is not]. (*Theaetetus* 189B–C.)

The principal worry here centers on the rather problematic idea of a something that is not. But the issue has another, more metaphysical side as well. For obviously, if error arises from confusing what is with an unreal something else, and this has a positive rather than simply negative bearing, the error could not be if the reality "what is not" were not acknowledged.

In one form or another this oblique approach to realism has recurred in various different guises over the years. Not only was it adumbrated in Plato's predecessors, but it rose to prominence once more in the thought of Josiah Royce, who in his 1885 classic on *The Religious Aspect of Philosophy* made error the pivot-point of his deliberations. To begin with he stressed the absolute inevitability of accepting the reality of error by reasoning essentially as follows:

> Error is . . . defined as a judgment that does not agree with its object. In the erroneous judgment, subject and situation are so combined as, in the object, the corresponding elements are not included. And thus the judgment comes to be false . . . But now consider our conviction that there is such a thing as error. Then either we are right, and then error exists, or we are wrong, and then error exists as well. Such a dilemma indicates the inevitability of error.[1]

The realization that we are sometimes mistaken is not a particularly edifying piece of knowledge. But it is at least something

regarding which we cannot possibly be mistaken. And so, error, for Royce, is an "indubitable fact" on which realism can rely for a firm foundation.[2] For error to obtain—for a judgment to be untrue to the object—means that the object's actual condition is not as the judgment claims it to be which, of course, requires an actual condition to realize this situation. Realism is now home free.

And not only is the concept of *error* inseparably linked to a commitment to realism, but this holds no less for the concept of *ignorance* as well. For if, as is surely often the case, we are (all of us!) ignorant of certain facts, then it must be that such facts, at least, obtain independently of what we think (be it individually or collectively).

But while this argumentation too is cogent, it represents an approach variant from that based purely on error. To argue for realism from error is to argue from a fault of commission. By contrast, to argue to this conclusion from ignorance is to argue from a fault of omission. And so, while the upshot is substantially the same, the route leading to this common destination is rather different. But either way, it transpires, somewhat ironically, that the ultimate basis of our commitment to realism need not root in our cognitive power but in our cognitive debility—in the inexorable prospects of error and ignorance.

It is important to note, however, that the realism at issue with error and ignorance is in both cases alike of a sort that does not take the categorical form: "Ontological-factual realism is correct since such-and-such is actually the case." Instead it approaches the matter in a circuitously oblique manner. Its format is unabashedly: "If (as is indeed only too plausible) you think that our cognitive situation is problematically disadvantaged—not only open to ignorance or error but to some extent actually enmeshed in it—then you will have to endorse ontological-factual realism as well." Such argumentation clearly pivots not on what is but on what is thought to be—it looks at reality through the mediation of *how we think* of it rather than directly on its factuality.

It thus emerges as a key feature of a cognitively negative approach to realism that it illustrates the characteristic style of conceptual idealism in that it takes the conceptually mediated line of arguing that our conceptual scheme—and, in particular our concept of error—is such that realism is inherently presupposed. In effect it argues that "Given that we have the conception of error as we actually do, the very idea that error occurs demands (given the nature of the concept at issue) that we stand committed to the correlative existence of an objectively mind-independent reality." In sum, what such reasoning endeavors to establish is that the conceptual mechanisms in whose terms of reference our thought about these matters stands committed to a thought-independent reality. Its case for factual realism proceeds from a basis of considerations regarding the limits of knowledge.[3]

But this affords no basis for any justified complaint. After all as noted above the request "Don't tell me what you think to be so; just tell me what actually is independently of how you conceive of it" presents a challenge which, as a matter of principle, it is impossible to meet. We have to be realistic (in the everyday sense of that term) about what sorts of expectations one can reasonably have and about what sorts of demands it is reasonable to make. And to impose on cogent thought about the real conditions and requisites whose realization is in principle impossible is decidedly inappropriate.[4]

## 2. The Role of Realism in Informative Communication

Whatever information we have about something, be it real or presumptive information, is always just that—information *we* ourselves *purport*. But nevertheless our attempts at communication and inquiry are undergirded by an information-transcending position—the stance that we communally inhabit a shared world of objectively existing things, a world of "real things" amongst

which we live and into which we inquire—and yet about which we do and must presume ourselves to have only imperfect information at any and every particular stage of the cognitive venture. Our commitment to an objective reality that lies behind the data at hand is indispensably demanded by any step into the domain of the publicly accessible objects that is essential to communal inquiry and interpersonal communication about a shared world. We could not establish communicative contact about a communally accessible objective item of discussion if our discourse were geared to the substance of our own idiosyncratic ideas and conceptions.

However, the objectivity at issue in our communicative discourse is a matter of its *status* rather than one of its *content*. For the substantive content of a thesis about the world is in and of itself more efficient to inform us whether it is factual or fictional or merely a grammatical exercise. This is something that we have to determine from its *context*: it is a matter of the frame, not of the canvas. The fact-oriented basis of our information-transmitting exchanges is provided for *a priori* by a conventionalized intention to talk about "the real world." This governing intention to take real objects to be at issue—objects as they really are, our potentially idiosyncratic conceptions of them quite aside—is fundamental because without this conventionalized intention we should not be able to convey information—or misinformation—to one another about a shared "objective" world.

We are able to say something about the (real) moon or the (real) Sphinx because of our submission to a fundamental communicative convention or "social contract" to the effect that we *intend* ("mean") to talk about the very thing itself as it "really" is—our own private conception of it notwithstanding. We adopt the standard policy in communicative discourse of letting "the language we use," rather than whatever specific ideas and conceptions we may actually "have in mind" on particular occasions, be the decisive factor with regard to the things at issue in our discussions. When I speak about the Sphinx (even though I do so on the basis of my own conceivably strange conception of

what is involved here), I will be discussing "the *real* Sphinx" in virtue of that fundamental conventionalized intention governing our use of referring terms—the intention to discuss "the moon itself" regardless of how untenable one's own *ideas* about it may eventually prove to be is a basic precondition of the very possibility of communication. It is crucial to the communicative enterprise to take an egocentrism-avoiding stance that rejects all claims to a privileged status for *our own* conception of things. In the interests of this stance we are prepared to "discount any misconceptions" (our own included) about things over a very wide range indeed—that we are committed to the stance that factual disagreements as to the character of things are communicatively irrelevant within very broad limits. The incorrectness of conceptions is inconsequential here.

If we were to set up our own conception of things as somehow definitive and decisive, we would at once erect a barrier not only to further inquiry but—no less importantly—to the prospect of successful communication with one another. Communication could then only proceed with the wisdom of hindsight—at the end of a long process of tentative checks. Communicative contact would be realized only in the implausible case where extensive exchange indicated retrospectively that there had been an *identity* of conceptions all along. And we would always stand on very shaky ground. For no matter how far we push our investigation into the issue of an identity of conceptions, the prospect of a divergence lying just around the corner—waiting to be discovered if only we pursued the matter just a bit further—can never be precluded. One could never advance the issue of the identity of focus past the status of a more or less well-grounded *assumption*. And then any so-called communication would no longer be an exchange of information but a tissue of frail conjectures. The communicative enterprise would become a vast inductive project—a complex exercise in theory-building, leading tentatively and provisionally toward something which, in fact, the imputations groundwork of our language enables us to presuppose from the very outset.

Communication requires not only common *concepts* but common *topics*, interpersonally shared items of consideration, a common world constituted by the self-subsistently real items basic to shared experience. The factor of objectivity reflects our basic commitment to a communally available world as the common property of communicators. Such a commitment involves more than merely *de facto* intersubjective agreement. For any substantive agreement is bound to be a matter of *a posteriori* discovery, while our view of the nature of things puts "the real world" on a necessary and *a priori* basis. This stance roots in the fundamental convention of a shared social insistence on communicating—the commitment to an objective world of real things affords the crucially requisite common focus needed for any genuine communication. What links my discourse topically with that of my interlocutors is our common subscription to the *a priori* presumption (a defeasible presumption, to be sure) that we are both talking about a shared thing, our own possible misconceptions of it notwithstanding. This means that no matter how extensive a diversity of views about the *nature* of a thing or type of thing at issue, we are still dealing with one common item. It assures reidentification across theories and belief-systems.

Our very conception of a *real thing* is such that it provides a fixed point, a stable center around which interpersonal communication revolves, an invariant focus of potentially diverse conceptions. What is to be determinative, decisive, definitive, etc., of the things at issue in my discourse is not my conception, or yours, or indeed anyone's conception at all. The conventionalized intention discussed means that a coordination of conceptions is not decisive for the possibility of communication. Your statements about a thing will convey something to me even if my conception of it is altogether different from yours. To communicate we need not take ourselves to share *views* of the world, but only take the stance that we share *the world* that is being discussed.

The commitment to *objectivity* is basic to any prospect of our discourse with one another about a shared world of "real things," to which none of us is in a position to claim privileged access. This commitment to reality-pertinence establishes a need to "distance" ourselves from things, that is, to recognize the prospect of a discrepancy between our (potentially idiosyncratic) conceptions of things and the true character of these things as they exist objectively in "the real world." The ever-present contrast between "the thing as we view it" and "the thing as it is" is the mechanism by which this crucially important distancing is accomplished. And maintaining this stance means that we have no warrant for ever claiming complete knowledge of a thing in bringing it wholly and fully within our epistemic grasp. For to make this claim would, in effect, be to *identify* "the thing at issue" purely in terms of "our own conception of it," an identification which would effectively remove the former item (the thing itself) from the stage of consideration as an independent entity in its own right, by endowing our conception with decisively determinative force. And this would lead straightaway to the unacceptable result of a cognitive solipsism that would preclude reference to intersubjectively identifiable particulars, and would thereby block the possibility of interpersonal communication and communal inquiry.

Any pretensions to the predominance, let alone the correctness, of our own conceptions regarding the realm of the real must be set aside in the context of communication. In communication regarding this we must be able to exchange information about them with our contemporaries and to transmit information about them to our successors. And we must be in a position to do this on the presumption that *their* conceptions of things are not only radically different from *ours*, but conceivably also rightly different. Thus, it is a crucial precondition of the possibility of successful communication about things that we must avoid laying any claim either to the completeness or even to the ultimate correctness of our own conceptions of any of the things

at issue. This renders it critically important *that* (and understandable *why*) conceptions are not pivotal for communicative purposes. Our discourse *reflects* our conceptions and perhaps *conveys* them, but it is not substantively *about* them.

What is crucial for communication, however, is the fundamental intention to deal with the objective order of this "real world." If our assertoric commitments did not transcend the information we have on hand, we would never be able to "get in touch" with others about a shared objective world. No claim is made for the *primacy* of our own conceptions, for their *correctness*, or even for their mere *agreement* with those of others. The fundamental intention to discuss "the thing itself" predominates and overrides any mere dealing with the thing as we conceive it to be. Certainly, that reference to "objectively real things" at work in our discourse does not contemplate a peculiar sort of *thing*—a new *ontological* category of "things-in-themselves." It is simply a shorthand formula for a certain communicative presumption or imputation rooted in an *a priori* commitment to the idea of a commonality of objective focus—a presumption that is allowed to stand unless and until circumstances arise to render it untenable.

## 3. Agreement is Not Essential

It is an essential requisite for communication that something real is purported to be at issue—a fact of the matter. A commonality of intent is critical here, but agreement about the fact is not. If it were necessary for effective communication that others think of matters as we do, we would be in sad straights indeed. How, after all, do we really know that Anaximander of Miletus was talking about *our* earth in his discussion in the sixth century BC? He is not here to reassure us. He did not leave elaborate discussions about his aims and purposes. How can we be so confident about what he meant in that strange talk about a slablike object suspended in equilibrium in the center of the cosmos?

The answer is straightforward. That he is *to be taken* to mean that *our* earth is such an object is something that turns, in the final analysis, on two very general issues in which Anaximander himself plays little if any role: (1) our subscription to certain generalized principles of interpretation with respect to the Greek language; and (2) the conventionalized subscription by us and ascription to other languages users in general of certain fundamental communicative policies and intentions. In the face of appropriate functional equivalences we allow neither a difference in language nor a difference of "thought-worlds" to block an identity of reference.

The realism at issue pertains to the fact *that* there is an objective reality and leaves entirely aside the issue of *what* it is like. We deliberately sidestep the whole matter of conceptions aside—abstracting from the question of the agreement of my conception with yours, and all the more from the issue of which one of us has the right conception. This sort of epistemic humility is the price we pay for keeping the channels of communication open.

Seen in *this* light, the key point may be put as follows: it is indeed a presupposition of effective communicative discourse about a thing that we purport (claim and intend) to make true statements about it. But for such discourse it is *not* required that we purport to have a true or even adequate conception of the thing at issue. On the contrary, we must deliberately abstain from any claim that our own conception is definitive if we are to engage successfully in profitable discourse with others. With factual communication it is reality that is ultimately in the driver's seat. We may think appearance but we have to talk reality.

## 4. Our Presuppositional Commitment to Reality

Metaphysical realism is based on the ontologically geared conception that there is a mind-independent reality able to ground the phenomena as we discern them. However, our commitment

to a mind-independent reality is not the fruit of experience. For we do not derive the existence of reality from experience; we bring it to our experience in order to be able to construe it as such—that is, as the experience of something real. For we indispensably need that initial existential presupposition to make a start. Without a committing from the very outset to a reality that grounds our experience, its cognitive import will be lost. For only on this basis can we proceed evidentially with the exploration of the interpersonally public and objective domain of a physical world-order that we share in common.

Of course, that second, descriptive (epistemic) component of realism stands on a very different footing. Unlike its *existence*, reality's *nature* is something about which we can only make warranted claims through examining it. Substantive information must come through inquiry with its evidential validation. Once we are willing to credit our observational data with objectivity, and thus with evidential bearing, then we can, of course, make use of them to inform ourselves as to the nature of the real. But that initial presumption has to be there from the start. Experience does not teach us *that* there is a reality, but rather *what* it is like.

Our commitment to realism is thus best seen as hinging on a certain practical *modus operandi*, encapsulated in the precept: "Proceed in matters of inquiry and communication on the basis that you are dealing with an objective realm, existing quite independently of the doings and dealings of minds—a realm, however, to whose ways minds will in certain ways responsive." Accordingly, we standardly operate on the basis of the "presumption of objectivity" reflected in the guiding precept: "Unless you have good reason to think otherwise (that is, as long as *nihil obstat*) treat the materials of experience-based inquiry and communication as veridical—as representing the nature of the real." The ideal of objective reality is the focus of a family of effectively indispensable regulative principles—a functionally useful instrumentality that enables us to transact our cognitive business in the most satisfactory and effective way.

Viewed in this light, the ultimate basis of our commitment to mind-independent reality is *not* provided by the findings of science. Instead, it roots in a postulation that precedes and underlies science, which would itself not be possible without a precommitment to the capacity of our means of observation to warrant claims about an objective world order. Mind-transcendence is not a *product* of inquiry; we must precommit ourselves to it to make inquiry as we understand it possible. It is a necessary (*a priori*) input into the cognitive project and not a contingent (*a posteriori*) output thereof. The objective bearing of experience is not something we can preestablish; it is something we must presuppose in the interest of honoring C. S. Peirce's pivotal injunction never to bar the path of inquiry.

What we learn from observational inquiry—from science if you will—is not *that* an unobservable order of physical existence causally undergirds nature as we observe it; rather, it affords indication regarding *what* these underlying structures are like. Science is systematized experience and as such does not (cannot) teach us that the observable order is explicable in terms of underlying causes and that the phenomena of observation are signs or symptoms of this extra- and sub-phenomenal order of existence; we must acknowledge this prior to any venture in developing an empirical science. It is something we must accept *a priori* from the very outset of observation as we understand it is to be able to provide objective information. What science does teach us (and metaphysics cannot) is what the descriptive character of this extra-phenomenal order can reasonably be supposed to be in the light of our experience of it.[5]

## 5. The Rationale of Realism

The ontological thesis that there is a mind-independent physical reality about which our inquiries informs us—even if imperfectly—is the key contention of metaphysical realism. But on the telling of the presenting analysis, this basic thesis has

the epistemic status of a presuppositional postulate that is initially validated by its pragmatic utility and ultimately retrovalidated by the satisfactory results of its implementation (in both practical and theoretical respects).

On this account, our commitment to realism is, at least initially, not a *product of our inquiries* about the world, but rather a *working presumption* that undergirds our very conception of the world. The sort of realism contemplated here is accordingly one that pivots on the fact that we *think* of reals in a certain sort of way because doing so merits our ends and purposes. It is, accordingly, rooted (in the final instance at least) not in the world's facts as such, but rather in the conceptual resources we employ for thinking about them—a stance which, ultimately, secures validation through "the wisdom of hindsight."

What does the postulation of a mind-independent reality do for us? Actually quite a lot! For one thing, it is essential to the whole of our standard conceptual scheme relating to inquiry and communications. Without it, both the actual management and the rational legitimation of our communicative and investigative (evidential) practice would be destroyed. Nothing that we do in this cognitive domain would make sense if we did not subscribe to the conception of a mind-independent reality.

To begin with, we indispensably require the notion of reality to operate the classical concept of truth as "agreement with reality" (*adaequatio ad rem*). Once we abandon the concept of reality, the idea that in accepting a factual claim as true we become committed to how matters actually stand—"how it really is"—would also go by the board. The very semantics of our discourse constrain its commitment to realism; we have no alternative but to regard as real those states of affairs claimed by the contentions we are prepared to accept. Once we put a contention forward by way of informative assertion, we must view as real the states of affairs it purports, and must see its claims as facts. We need the notion of reality to operate the conception of truth. A factual statement on the order of "There are pi mesons" is true if and only if the world is such that pi mesons exist within it.

True statements must, by virtue of their very nature as truths actually state facts: they state what really is so, which is exactly what it is to "characterize reality." The conception of *truth* and of *reality* come together in the notion of *adaequatio ad rem*—the venerable principle that to speak truly is to say how matters stand in reality, in that things actually are as they are said to be.

In the second place, a nihilistic denial that there is such a thing as reality would abolish the crucial Parmenidean divide between appearance and reality. And this would exact a fearful price from us: we would be reduced to talking only of what we (I, you, many of us) *think* to be so. The crucial contrast-conception of actual truth would no longer be available: we would only be able to contrast our *putative* truths with those of others, but could no longer operate the classical distinction between the putative and the actual, between what people merely *think* to be so and what actually *is* so. We could not take the stance that, as the Aristotelian commentator Themistius put it, "that which exists does not conform to various opinions, but rather the correct opinions conform to that which exists."[6]

The third point is the issue of cognitive coordination. Communication and inquiry, as we actually carry them on, are predicated on the fundamental idea of a real world of objective things, existing and functioning "in themselves," without specific dependence on us and so equally accessible to others. Inter-subjectively valid communication can only be based on common access to an objective order of things. The whole communicative project is predicated on a commitment to the idea that there is a realm of shared objects about which we as a community share questions and beliefs, and about which we ourselves as individuals presumably have only imperfect information that can be criticized and augmented by the efforts of others.

This points to a fourth important consideration. Only through reference to the real world as a *common object* and shared focus of our diverse and imperfect epistemic strivings are we able to effect communicative contact with one another. Inquiry and communication alike are geared to the conception of an objective

world: a communally shared realm of things that exist strictly "on their own" comprising an enduring and independent realm within which and, more importantly, with reference to which inquiry proceeds. We could not proceed on the basis of the notion that inquiry estimates the character of the real if we were not prepared to presume or postulate a reality for these estimates to be estimates of. It would clearly be pointless to devise our characterizations of reality if we did not stand committed to the proposition that there is a reality to be characterized.

The fifth consideration is that a recourse to mind-independent reality makes possible a "realistic" view of our knowledge as potentially flawed. A rejection of this commitment to reality *an sich* (or to the actual truth about it) exacts an unacceptable price. For in abandoning this commitment we also lose those regulative contrasts that canalize and condition our view of the nature of inquiry (and indeed shape our conception of this process as it stands within the framework of our conceptual scheme). We could no longer assert: "What we have there is good enough as far as it goes, but it is presumably not 'the whole real truth' of the matter." The very conception of inquiry as we conceive it would have to be abandoned if the contrast conceptions of "actual reality" and "the real truth" were no longer available. Without the conception of reality we could not think of our knowledge in the fallibilistic mode we actually use—as having provisional, tentative, improvable features that constitute a crucial part of the conceptual scheme within whose orbit we operate our concept of inquiry.

Reality (on the traditional metaphysicians' construction of the concept) is the condition of things answering to "the real truth"; it is the realm of what really is as it really is. The pivotal contrast is between "mere appearance" and "reality as such", between "our picture of reality" and "reality itself," between what actually is and what people merely think (believe, suppose, etc.) to be. And our allegiance to the conception of reality, and to this contrast that pivots upon it, root in the fallibilistic recognition that at the level of the detailed specifics of scientific theory, anything

we presently hold to be the case may well turn out otherwise—indeed, certainly will do so if past experience gives any auguries for the future.

Our commitment to the mind-independent reality of "the real world" stands together with our acknowledgment that, in principle, any or all of our *present* scientific ideas as to how things work in the world, at *any* present, may well prove to be untenable. This conviction in a reality that lies beyond our imperfect understanding of it (in all the various senses of "lying beyond") roots in our sense of the imperfections of our scientific world-picture—its tentativity and potential fallibility. In abandoning such a commitment to a mind-independent reality, we would lose the impetus of inquiry by losing our grip on the impetus of ignorance and error.[7]

Sixthly and finally, we need the conception of reality in order to operate the causal model of inquiry about the real world. Our standard picture of man's place in the scheme of things is predicated on the fundamental idea that there is a real world (however imperfectly our inquiry may characterize it) whose causal operations produce *inter alia* causal impacts upon us, providing the basis of our world-picture. Reality needed to provide for the causal source and basis of the appearances, the originator and determiner of the phenomena of our cognitively relevant experience. "The real world" is seen as causally operative both in serving as the external molder of thought and as constituting the ultimate arbiter of the adequacy of our theorizing.

In summary, then, we need that postulate of an objective order of mind-independent reality for at least six important reasons.

- To preserve the distinction between true and false with respect to factual matters and to operate the idea of truth as agreement with reality.
- To preserve the distinction between appearance and reality, between our *picture* of reality and reality itself.
- To serve as a basis for inter-subjective communication.

- To furnish the basis for a shared project of communal inquiry.
- To provide for the fallibilistic view of human knowledge.
- To sustain the causal mode of learning and inquiry and to serve as basis for the objectivity of experience.

The conception of a mind-independent reality accordingly plays a central and indispensable role in our thinking about communication and cognition. In both areas alike we seek to offer answers to our questions about how matters stand in this "objective realm" and the contrast between "the real" and its "merely phenomenal" appearances is crucial here. Moreover, this is also seen as the target and *telos* of the truth-estimation process at issue in inquiry, providing for a common focus in communication and communal inquiry. The "real world" thus constitutes the "object" of our cognitive endeavors in both senses of this term—the *objective* at which they are directed and the *purpose* for which they are exerted. And so the commitment to a subexperimental reality becomes pivotal here, affording the existential matrix in which we move and have our being, and whose impact upon us is the prime mover for our cognitive efforts. All of these facets of the concept of reality are integrated and unified in the classical doctrine of truth as it corresponds to fact (*adaequatio ad rem*), a doctrine that only makes sense in the setting of a commitment to mind-independent reality.

## 6. A Pragmatic Foundation

Seen in this light, the justification for this fundamental presupposition of objectivity is not *evidential*; postulates after all, are not based on evidence. Rather, it is *functional* and pragmatic—justified by considerations of utility in relation to the productive work it is able to do for us. We require this postulate to operate our conceptual scheme. The justification of this postulate lies

in its utility. We could not form our existing conceptions of truth, fact, inquiry, and communication without presupposing the independent reality of an external world. We simply could not think of experience and inquiry as we do. (What we have here is a "transcendental argument" of sorts from the character of our conceptual scheme to the acceptability of its inherent presuppositions.)[8]

To be sure, one might, in theory, abandon realism and accept the negativities surveyed above. But doing so would exact a fearful price.[9] For as these deliberations indicate, the conception of a mind-independent reality plays a central and indispensable role in our thinking with respect to matters of language and cognition. In communication and inquiry alike we seek to offer answers to our questions about how matters stand in this "objective realm." It is seen as the epistemological *object* of veridical cognition, in the context of the contrast between "the real" and its "merely phenomenal" appearances. Again, it is seen as the target of *telos* of the truth-estimation process at issue in inquiry, providing for a common focus in communication and communal inquiry. (The "real world" thus constitutes the "object" of our cognitive endeavors in both senses of this term—the *objective* at which they are directed and the *purpose* for which they are exerted.) And further, reality is seen as the ontological *source* of cognitive endeavors, affording the existential matrix in which we move and have our being, and whose impact upon us is the prime mover for our cognitive efforts. All of these facets of the concept of reality are integrated and unified in the classical doctrine of truth as it corresponds to fact (*adaequatio ad rem*), a doctrine that only makes sense in the setting of a commitment to mind-independent reality.

Our concept of a *real thing* is such that it provides a fixed point, a stable center around which interpersonal communication revolves, an invariant focus of potentially diverse conceptions. What is to be determinative, decisive, definitive, etc., of the things at issue in my discourse is not my conception, or yours,

or indeed anyone's conception at all. The conventionalized intention discussed means that a coordination of conceptions is not decisive for the possibility of communication. Your statements about a thing can and should convey something to me even if my conception of it is altogether different from yours. For to communicate we need not take ourselves to share views of the world, but only take the stance that we share the world being discussed. This commitment to an objective reality that underlies the data at hand is indispensably demanded by any step into the domain of the publicly accessible objects essential to communal inquiry and interpersonal communication about a shared world.[10]

Realism, then, is a position to which we are constrained not by the push of evidence but by the pull of purpose. Initially, at any rate, a commitment to realism is an *input* into our investigation of nature rather than an *output* thereof. At bottom, it does not represent a discovered fact, but a methodological presupposition of our praxis of inquiry; its status is not constitutive (fact-descriptive) but regulative (praxis-facilitating). Realism is not a factual discovery, but a practical postulate justified by its utility or serviceability in the context of our aims and purposes, seeing that if we did not *take* our experience to serve as an indication of facts about an objective order we would not be able to validate any objective claims whatsoever. (To be sure, what we can—and do—ultimately discover is that by taking this realistic stance we are able to develop a praxis of inquiry and communication that proves effective in the conduct of our affairs.)

## 7. Retrojustification: The Wisdom of Hindsight

But how can functional utility by itself provide sufficient and adequate validation? After all, a rationale in terms of functional utility will establish our claims to mind-independent reality not by the cognitive route of learning from experience but by the

pragmatic route of an eminently useful postulation. Crucial though this may be, it really cannot be the *entire* story. After all, it does not provide any assurance that we will actually succeed in our endeavor if we do proceed in this way; it just has it that we will not if we do not. The issue of actual effectiveness still remains untouched. And so, there yet remains room for doubt, rooting in the following challenge:

> Let us grant that this line of approach provides a cogent practical argument. All this shows is that realism is *useful*. But does that make it *true*? Is there any rational warrant for it over and above the mere fact of its utility?

At this point it becomes necessary to move beyond presupposed functional requisites to address the issue of actual effectiveness. We must now have recourse to the resources of actual experience. For what *is* learned by experience—and can only be learned in this way—is that in proceeding on this prejudgment our attempts do, by and large, work out pretty well *vis-à-vis* the purposes we have in view for inquiry and communication.

When it comes to this issue of actual efficacy, there is no choice but to proceed experientially—through the simple stratagem of "trying and seeing." Functional requiredness remains a matter of *a priori* considerations, but efficacy—actual sufficiency to our purposes—will be a matter of *a posteriori* experience. It is, and is bound to be, a matter of retrojustification—a retrospective revalidation in the light of experience. Here there is room for an empirically delivered pragmatic consideration that our praxis of inquiry and communication does actually work. It now becomes a critical fact that we can effectively and (by and large) successfully communicate with one another about a shared world, inquiry into whose nature and workings proceeds successfully as a communal project of investigation. The ultimately crucial consideration is that wisdom-of-hindsight "retro-validation" retrospectively substantiates the

evidence-transcending imputations built into the objective claims to which we subscribe.

We want and need objective information about "the real world." But of course this is not to be had directly, without the epistemic mediation of experience. And so we treat certain data as evidence—we extend "evidential credit" to them as it were. Through trial and error we learn that some of them do indeed *deserve* it, and then we proceed to extend to them greater weight—we "increase their credit limit" as it were and rely on them more extensively. And, of course, to use those data as evidence is to build up a picture of the world, a picture which shows, with the "wisdom of hindsight," how appropriate it was for us to use those evidential data in the first place.

Charles Sanders Peirce put the issue with characteristic clarity: "It may be asked how I know that there are reals. If this hypothesis is the sole support of my method of inquiry, my method of inquiry must not be used to support my hypothesis."[11] Peirce placed his finger on exactly the right question. But the issue is not really one of either-or. For while this reality-hypothesis is indeed not a product of inquiry, but a presupposition for it, nevertheless, it is one whose justification ultimately stands or falls on the success of the inquiries it facilitates. Its validation cannot be preestablished through evidence but can only be provided *ex post facto* through the justificatory impetus of successful implementation.

What we began with was a basic project-facilitating postulation of effectively this-or-nothing. But this does not tell the whole of the justificatory story. For there is also the no less important fact that this postulation obtains a vindicating retrojustification because the farther we proceed on this basis, the more its obvious appropriateness comes to light. With the wisdom of hindsight we come to see with increasing clarity that the project that these presuppositions render possible is an eminently successful one. The pragmatic turn does crucially important work here in putting at our disposal a style of justificatory argumentation that manages to be cyclical without vitiating circularity.

## 8. Avoiding Circularity

Accordingly, the substantive picture of nature's ways that is secured through our empirical inquiries is itself ultimately justified, retrospectively as it were, through affording us with the presuppositions on whose basis inquiry proceeds. As we develop science there must come a "closing of the circle." The world-picture that science delivers into our hands must eventually become such as to explain how it is that creatures such as ourselves, emplaced in the world as we are, investigating it by the processes we actually use, should do fairly well at developing a workable view of that world. The "validation of scientific method" must in the end itself become scientifically validated. Science must (and can) retrovalidate itself by providing the material (in terms of a science-based world-view) for justifying the methods of science as an effective way for beings like us to investigate a world like that. Though the process is cyclic and circular, there is nothing vicious and vitiating about it. It is a matter of a feedback process where later stages revisit circular ones from an enhanced perspective recognizing that presumptions always need the ultimate validation of retrospective hindsight.

Viewed in this way, the rational structure of the overall process of justification looks as follows:

1. We use various sorts of experiential data as evidence for objective fact.
2. We do this in the first instance for *practical* reasons, *faute de mieux*, because only by proceeding in this way can we hope to resolve our questions with any degree of rational satisfaction.
3. As we proceed along these lines two things happen:

   (i) On the pragmatic side we find that we obtain a world picture on whose basis we can operate effectively. (Pragmatic revalidation.)

(ii) On the cognitive side we find that we arrive at a picture of the world that provides an explanation of how it is that we are encouraged to get things (roughly) right—that we are in fact justified in using our phenomenal data as data of objective fact. (Explanatory revalidation.)

Accordingly, the success at issue is twofold—both in terms of understanding (cognition) and in terms of application (praxis). And it is this ultimate success that justifies and rationalizes, retrospectively, our evidential proceedings.

We arrive at the overall situation of a dual "retrojustification" given in Figure 4, which shows that all the presuppositions of inquiry are ultimately substantiated by a "wisdom of hindsight" enabling us to see that we are enabled by their means to achieve both practical success and a theoretical understanding of our place in the world's scheme of things. This includes how our inquiry methods manage to succeed. The cycles must—and presumably do—close in smooth loops of systemic justification. And both loops are crucial. Successful practical implementation is needed as an extra-theoretical quality-control monitor of our theorizing. But what is no less critical for the overall validation

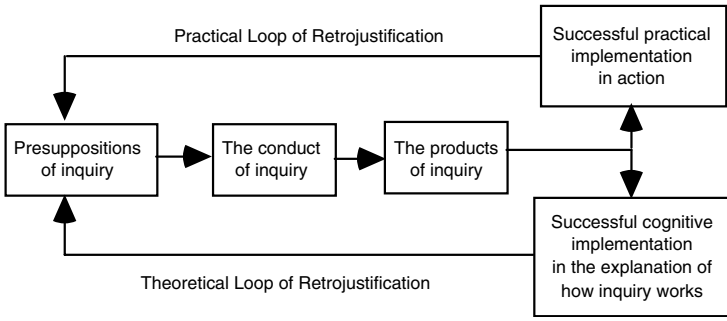

Practical Loop of Retrojustification
Successful practical implementation in action
Presuppositions of inquiry
The conduct of inquiry
The products of inquiry
Successful cognitive implementation in the explanation of how inquiry works
Theoretical Loop of Retrojustification

**Figure 4** The retrojustification of the presuppositions of inquiry

*Note*: Such a cycle explains, with the hindsight afforded by the products of inquiry, how successful inquiry is possible.

of our claims to objective knowledge is the capacity of our scientifically devised view of the world to underwrite an explanation of how it is that a creature constituted as we are, operating by the means of inquiry that we employ, and proceeding within an environment such as ours, can ultimately devise a relatively accurate view of the world. The closing of these inquiry-geared loops serves retrospectively to validate those realistic presuppositions or postulations that made the whole process of inquiry possible in the first place. Realism thus emerges as a presupposition-affording postulate for inquiry—a postulation whose ultimate legitimation eventuates retrospectively through the results—both practical and cognitive—that the process of inquiry based on those yet-to-be-justified presuppositions is able to achieve.

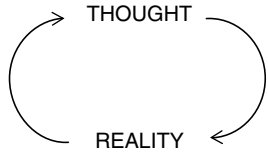
## 9. A Review

A brief review of this account's rather complex line of deliberation may be in order. Metaphysical realism—the doctrine that there is a mind-independent reality and that our experience provides us with a firm cognitive grip upon it—does not represent a learned fact but a presuppositional postulate. As such, it has a complex justification that comes in two phases.

The first, *initial* phase is prospective and presumptive, proceeding with a view to the functional necessity of *taking* this position—its purpose-dictated inevitability. For this step alone renders possible a whole range of activities relating to inquiry and to communication that is of the highest utility for us—and indeed is a practical necessity. In possibilizing[12]—that is, making feasible—a host of purpose-mandated activities, the postulate of metaphysical realism obtains its initial justification in the practical order of reasoning.

The second phase of justification goes further, albeit retrospectively. It proceeds by noting that after we actually engage in the goal-directed practice that the postulate in question possibilizes,

our applicative and explanatory efforts are, in fact, attended by success—that making the initial postulate has an immense pragmatic payoff. This issue of actual efficacy is ultimately crucial for the overall justification of the practical postulate at issue. And so, overall, a benign cycle is at work here, while structure takes the form:




Realism accordingly has two indispensable and inseparable constituents—the one existential and ontological, and the other cognitive and epistemic. The former maintains that there indeed is a real world—a realm of potentially thought-transcendent objective physical reality. The latter maintains that we can to some extent secure adequate descriptive information about this mind-independent realm through our interactive experience with it. And this second contention obviously presupposes the first.

But how can that first, ontological thesis be secured? Clearly it is not the product of an inductive inference secured through the scientific systematization of our observations. Rather, it represents a regulative presupposition that makes science possible in the first place. If we did not assume from the very outset that our sensations somehow relate to an extra-mental reality, we could clearly make no use of them to draw any inference whatever about "the real world." The domain of mind-independent reality is something we cannot *discover*—we do not learn that it exists as a result of inquiry and investigation.

After all, how could we ever learn from our observations that our mental experience is itself largely the causal product of the machinations of a mind-independent matrix, that all those phenomenal appearances are causally rooted in a physical reality?

This is obviously something we have to suppose from the very outset. What is at issue is, all too clearly, a *precondition* for empirical inquiry—a presupposition for the usability of observational data as sources of objective information. That experience is indeed objective, that what we take to be evidence *is* evidence, that our sensations yield information about an order of existence outside the experiential realm itself, and that this experience constitutes not just a mere phenomenon but an appearance of something extra-mental belonging to an objectively self-subsisting order, all this is something that we must always *presuppose* in using experiential data as "evidence" for how things stand in the world.

The fact is that we do not learn or discover that there is a mind-independent physical reality; we have no alternative but to *presume or postulate* it. Objectivity represents a postulation made on *functional* (rather than *evidential*) grounds: we endorse it in order to be in a position to learn by experience at all. Objective experience is, after all, possible only if the existence of such a real, thought-independent world is *presupposed* from the outset rather than being seen as a matter of *ex post facto* discovery about the nature of things.[13]

Given that it has such important work to do, the notion of objective reality cannot be dismissed as vacuous or superfluous. As was observed above, the utility of the conception of reality is so great that if it were not already there we would have to invent it. But the pragmatic success that ensues when we put this conception to work goes to show that we have not in fact done so.[14]

## 10. The Aspect of Idealism

Now insofar as realism ultimately rests on a pragmatic basis, it is not based on considerations of independent substantiating evidence about how things actually stand in the world, but rather on considering, as a matter of setting reasoning, how we do (and must) *think* about the world within the context of the projects to

which we stand committed. In this way, the commitment to a mind-independent reality plays an essentially pragmatic role as providing a functional requisite for our intellectual endeavors (specifically in relation to communication and inquiry). Such a position harks back to the salient contention of classical idealism that values and purposes play a pivotal role in our understanding of the nature of things thus return also to the characteristic theme of idealism—the active role of the knower not only in the *constituting* but also in relation to the very *constitution* of what is known.[15] And such a validation of realism pivots, interestingly enough, on the *conception* of a mind-independent reality—a circumstance which gives to realism a decidedly idealistic cast.

To be sure, this sort of idealism is not substantive but ultimately methodological. It is not a rejection of real objects that exist independently of mind and as such are causally responsible for our objective experience; quite the reverse, it is designed to facilitate their acceptance. But it holds that the justificatory *rationale* for this acceptance lies in a framework of mind-supplied purpose. For on its basis our commitment to a mind-independent reality is seen to arise not *from* experience but *for* it— for the sake of putting us into a position to exploit our experience as a basis for validating inquiry and communication with respect to the objectively real.

"Reality as such" is no doubt independent of our beliefs and desires, but of course what most immediately concerns us is reality *as we can manage to see it.* And the only view of reality that is available to us is one that is devised by us under the aegis of principles of acceptability that we subscribe to because doing so serves our purposes.

A position of this sort is in business as a realism all right. But seeing that it pivots on the character of our concepts and their *modus operandi*, it transpires that the business premises it occupies are actually mortgaged to idealism. For its basic commitment to the position that objectivity is the fruit of communicative purpose allows idealism to infiltrate into the realist's domain.

And the idealism at issue cuts deeper yet. No doubt, we are firmly and irrevocably committed to the idea that there is a physical realm out there which all inquirers inhabit and examine alike and we accept that all investigations exist and proceed within this one single shared reality, the manifold of actual existence and process. But this very idea of a single, uniform, domain of physical objects and laws represents just exactly that—*an idea of ours*. And this idea is itself a matter of how we find it convenient and efficient to think about things: it is no more—though also no less—than the projection of a theory devised to serve the needs and conveniences of beings such as ourselves, situated as we are.

This view of things endorses an object-level realism that rests on a presuppositional idealism at the justificatory infralevel. We arrive, paradoxical as it may seem, at a realism that is founded, initially at least, on a fundamentally idealistic basis—a realism whose *justificatory basis* is ultimately purposive and thereby ideal.

And so, back to basics.

As regards one's own, personal knowledge one knows that one must maintain the distinction between what is rationally true and what one merely thinks to be so. And at the same time one realizes that it is impossible to deal in specifics here. It makes no sense to say: "$p$ is an instance of a fact that I don't know to be true." And much the same situation holds for our collective knowledge as a fact of the labors of the inquiring community at large. We cannot ignore that there are truths about reality that we—the community of present day inquirers—do not know to be so. But we cannot go into detail here. We cannot say: "$p$ is a true fact about the world that is not presently known to be so." Like it or not, we must acknowledge the fundamental fact of a discrepancy between reality and its appearance—and have to come to terms with this. It is certainly not the case that the appearance presents a correct account of reality but rather, that a rationally revised reconstruction of the appearances affords our best-available *estimate* of the nature of the real.

A meaningful realism can only exist in a state of tension. It is important to stress against the skeptic that the human mind is sufficiently well attuned to reality that *some* knowledge of it is possible, seeing that the only reality worth having is one that is in some degree knowable. But it is no less important to join with realists in stressing the independent character of reality, acknowledging that reality has a depth and complexity of make-up that inevitably outruns the reach of mind.[16] The very limitation of our knowledge—our recognition that there is more to reality than what we do and can know or ever conjecture about it—speaks eloquently for the mind-independence of the real.

# Notes

## Chapter 1

[1] William P. Alston, "Yes, Virginia, There is a Real World," *Proceedings and Addresses of the American Philosophical Association*, vol. 52 (1979), 779–808 (see p. 779). Compare: "[T]he world is composed of particulars [individual existing things or processes] which have *intrinsic characteristics*—i.e., properties they have or relationships they enter into with other particulars independently of how anybody characterizes, conceptualizes, or conceives of them." Frederick Suppe, "Facts and Empirical Truth," *Canadian Journal of Philosophy*, 3 (1973), 197–212 (see p. 200).

[2] Fragments 10 and 16, Bywater.

[3] Compare the author's *Metaphysics* (Amherst, NY: Prometheus Books, 2006), pp. 22–24.

[4] On these issues see also the author's *Metaphysics*, pp. 4–7.

## Chapter 2

[1] Compare Philip Hugly and Charles Sayward, 'Can a Language Have Indenumerably Many Expressions?' *History and Philosophy of Logic*, vol. 4 (1983).

[2] This supposes an upper limit to the length of intelligible statements. And even if this restriction were waived, the number of statements will still be no more than *countably* finite.

[3] Our position thus takes no issue with P. F. Strawson's precept that "facts are what statements (when true) state." ("Truth," *Proceedings of the Aristotelian Society*, Supplementary Volumes 24, 1950, pp. 129–156; see p. 136). Difficulty would ensue with Strawson's thesis only if an "only" were added.

[4] Note that if some fact cannot be formulated, then it follows that not every fact can be formulated. For a counter-instance is then provided by the megafact that encompasses all facts.

[5] The predicate "is an unstatable fact" is what I call *vagrant*: it has no identifiable address. On this issue see my *Epistemic Logic* (Pittsburgh: University of Pittsburgh Press, 2005).

[6] On Leibniz's deliberations about the limits of language see the author's "Leibniz's Quantitative Epistemology," *Studia Leibnitiana*, vol. 36 (2004), pp. 210–230.

[7] The circumstance that not every *actual fact* can be articulated in a (true) statement shows a fortiori that not every *possible situation* can be characterized linguistically. If the domain of fact outruns the bounds of language articulation then the manifold of possibility must certainly do so as well. We must accordingly acknowledge that not everything is sayable!

[8] We here take "counting" to be a matter of indicating integers by name—e.g., as "thirteen" or "13"—rather than descriptively, as per "the first prime after eleven."

[9] For relevant material see also the author's *Metaphysics* (Amherst, NY: Prometheus Books, 2006), pp. 101–104.

[10] See also the author's *Metaphysics*, pp. 105–109.

[11] All this sort of thing is set out clearly in Aristotle's *On Interpretation* (*De interpretatione*).

[12] Translated in part in N. Kretzman and E. Stump, *The Cambridge Translation of Medieval Philosophical Texts*, Vol. I: Logic and Philosophy of Language (Cambridge: Cambridge University Press, 1988), see pp. 389–412.

[13] For relevant material see also the author's *Imagining Irreality: A Study of Unreal Possibilities* (Chicago: Open Court, 2003), pp. 38–43.

## Chapter 3

[1] S. T. I, 10.3. *Summa contra gent. I, 59. De ventale I.2.*

[2] Immanuel Kant, *Critique of Pure Reason*, A226 = B279.

[3] Michael Dummett, "Truth," *Proceedings of the Aristotelian Society*, vol. 59 (1958–59), p. 160.

[4] Of course *knowability in practice* is something else again—especially where finite knowers such as ourselves are concerned.

[5] On these issues see also the author's *Reason and Reality* (Lanham, MD: Rowman and Littlefield, 2005), pp. 59–60.

[6] On the concreteness of the real see Charles Hartshorne, *Anselm's Discovery* (La Salle, IL: Open Court, 1965), pp. 189–192.

[7] See C. I. Lewis, *An Analysis of Knowledge and Valuation* (La Salle, IL: Open Court, 1962), pp. 180–181.

[8] On these issues see also the author's *Imagining Irreality* (Chicago: Open Court, 2003), pp. 33–36.
[9] Compare the author's *Reason and Reality*, pp. 86–101.

## Chapter 4

[1] Accordingly, there is no problem about "$t_o$ is a truth *you* don't know," although I could not then go on to claim modestly that "You know everything that I do." For the contentions $\sim Kyt_o$ and $(\forall t)(Kit \supset Kyt)$ combine to yield $\sim Kit_o$ which conflicts with the claim $Kit_o$ that I stake in claiming $t_o$ as a truth.
[2] In claiming to know $p$ & $\sim Kip$ we claim:

$$Ki(p \,\&\, \sim Kip)$$

But since $Kx(p \,\&\, q) \rightarrow (Kxp \,\&\, Kxq)$ obtains, we obtain both $Kip$ and $Ki(\sim Kip)$. But the latter of these entails $\sim Kip$. And so a manifest contradiction results.
[3] On these issues see also the author's *Scientific Progress* (Oxford: Blackwell, 1978).
[4] See B. W. Petley, *The Fundamental Physical Constants and the Frontiers of Measurement* (Bristol and Boston: Hilger, 1985).
[5] On the structure of dialectical reasoning see the author's *Dialectics* (Albany NY: State University of New York Press, 1977), and for the analogous role of such reasoning in philosophy see his *The Strife of Systems* (Pittsburgh: University of Pittsburgh Press, 1985).
[6] The author's *Epistemology* (Albany, NY: SUNY Press, 2003) contains further material relevant to this chapter's deliberations.

## Chapter 5

[1] Ontological realism contrasts with ontological idealism; scientific realism contrasts with scientific instrumentalism: the doctrine that science in no way describes reality, but merely affords a useful organon of prediction and control.
[2] Karl R. Popper, *Objective Knowledge* (Oxford: Clarendon Press, 1972), p. 9.
[3] For further details on the issues of this chapter see also the author's *Scientific Realism* (Dordrecht: D. Reidel, 1987).

## Chapter 6

[1] Josiah Royce, *The Religious Aspect of Philosophy* (Boston: Houghton Mifflin, 1885), Chap. 11, and especially pp. 396–397.

[2] See James Courant in R. A. Puta (ed.), *The Cambridge Companion to William James* (Cambridge, MA: Cambridge University Press, 1997), pp. 187–189.

[3] See the author's, *Empirical Inquiry* (Totowa, NJ: Rowman & Littlefield, 1982), as well as *Realistic Pragmatism* (Albany: State University of New York Press, 2000), and *Realism and Pragmatic Epistemology* (Pittsburgh: University of Pittsburgh Press, 2005). See also Gerhard Vollmer, *Wissenschaftstheorie am Einsatz* (Stuttgart: Hirzel, 1993).

[4] Some of the issues of this section are also addressed in the author's *Error* (Pittsburgh: University of Pittsburgh Press, 2007), See especially pp. 80–84, as well as in his *Reason and Reality* (Lanham, MD: Rowman & Littlefield Publishers, 2005), See especially pp. 85–90.

[5] On these issues see also the author's *Metaphysics*: *The Key Issues from a Realistic Perspective* (Amherst, NY: Prometheus Books, 2006), pp. 36–38.

[6] Moses Maimonides, *The Guide for the Perplexed*, I, 71, 96a.

[7] On the tactic of basing metaphysical realism on the prospect of insuperable ignorance and cognitively inaccessible fact see the author's *Scientific Realism* (Dordrecht: Reidel, 1987), and his *Epistemology* (Albany: State University of New York press, 2003). See also Sanford G. Goldberg, "Metaphysical Realism and Thought," *American Philosophical Quarterly*, vol. 45 (2008), pp. 149–163.

[8] Compare the discussion in the author's *Reason and Reality* (Lanham, MD: Rowman and Littlefield, 2005), pp. 80–85.

[9] To be sure, adopting a correspondistic view regarding the meaning of "truth"—and thus regarding the consequences of truth-claims—does nothing whatever to address the issue of the criteriology of truth and the evidentistic of truth claims. This point has been stressed by many truth-theorists including the present author in his *Coherence Theory of Truth* (Oxford: Clarendon Press, 1973).

[10] Compare the discussion in the author's *Metaphysics*, pp. 39–46.

[11] Charles S. Peirce, *Collected Papers*, Vol. 5 (Cambridge, MA: Harvard University Press, 1934), sect. 5.383.

[12] In English, we have no single-word verb "to make possible" akin to the German *ermoeglichen*. To adopt "possibilize" would perhaps be sensible and certainly convenient.

[13] Kant held that we cannot experientially learn through perception about the objectivity of outer things, because we can only recognize

our perceptions as *perceptions* (i.e., representations of outer things) if these outer things are supposed as such from the first (rather than being learned or inferred). As he summarizes in the "Refutation of Idealism": "Idealism assumed that the only immediate experience is inner experience, and that from it we can only *infer* outer things—and this, moreover, only in an untrustworthy manner. . . . But in the above proof it has been shown that outer experience is really immediate. . ." (*Critique of Pure Reason*, B276).

On these issues see also the author's *Metaphysics*, pp. 33–36.

[14] This discussion draws some relevant materials from the author's *Empirical Inquiry* (Totowa, NJ: Rowman and Littlefield, 1982).

[15] On these issues see also the author's *Conceptual Idealism* (Oxford: Basil Blackwell, 1973).

[16] Matters relevant to this chapter are also discussed in the author's *Methodological Pragmatism* (New York: New York University Press, 1977), *Scientific Realism* (Dordrecht: Kluwer, 1987), and *Cognitive Pragmatism* (Pittsburgh: University of Pittsburgh Press, 2001).

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